

DCR-TRV7/TRV7E

RMT-808/809

SERVICE MANUAL

C/M Cassette
Memory
Handycam Vision™

D MECHANISM



Photo : DCR-TRV7
: RMT-808

US Model
Canadian Model
E Model
Tourist Model
DCR-TRV7
AEP Model
UK Model
E Model
Tourist Model
DCR-TRV7E

NTSC : DCR-TRV7
PAL : DCR-TRV7E

For MECHANISM ADJUSTMENTS, refer to the
"DV MECHANICAL ADJUSTMENT MANUAL I"
(9-973-815-11).

SPECIFICATIONS

Video camera recorder

System

Video recording system

Two rotary heads, Helical scanning system

Audio recording system

Rotary heads, PCM system

Quantization: 12bits (Fs 32kHz, stereo 1, stereo 2), 16bits (Fs 48kHz, stereo)

Video signal

DCR-TRV7:

NTSC color, EIA standards

DCR-TRV7E:

PAL colour, CCIR standards

Usable cassette

Mini DV cassette with logo printed

Tape speed

SP: Approx. 18.83 mm/s

LP: Approx. 12.57 mm/s

Recording/playback time

SP mode: 1 hour (DVM60)

LP mode: 1.5 hours (DVM60)

Fastforward/rewind time

Approx. 2 min. 30 s (DVM60) (using with battery pack)

Approx. 1 min. 45 s (DVM60) (using with AC power adaptor)

Image device

CCD (Charge Coupled Device 1/3")

Viewfinder

Electric viewfinder (colour)

Lens

DCR-TRV7/DCR-TRV7E:

E, Tourist MODEL

Combined power zoom lens, 120x (Digital), 10x (Optical)

DCR-TRV7E:AEP, UK MODEL

Combined power zoom lens, 20x (Digital), 10x (Optical)

Focal distance

f = 4.0 to 40 mm

(3 1/16 to 1 5/8 in.)

1 1/2 to 15 in.

(38 to 380 mm when converted into a 35 mm still camera)

F 1.8 - 2.6

TTL autofocus system inner focus

wide macro system

Colour temperature

Auto

Minimum illumination

3 lux at F 1.8

Illumination range

3 to 100,000 lux

Recommended illumination

More than 100 lux

LCD screen

Picture

4 inches measured diagonally

80.7 x 58.9 mm

(3 1/4 to 2 3/8 in.)

On-screen display

TN LCD/TFT active matrix method

Total dot number

112,086 (479 x 234)

Input and output connectors

5 video output

4-pin mini DIN

Luminance signal: 1 Vp-p, 75 ohms, unbalanced, sync negative

DCR-TRV7:

Chrominance signal: 0.286Vp-p, 75 ohms, unbalanced

DCR-TRV7E:

Chrominance signal: 0.3 Vp-p, 75 ohms, unbalanced

Audio/Video output

Special minijack, 1 Vp-p, 75 ohms, unbalanced, sync negative

327 mV, (at output impedance more than 47 kilohms)

Output impedance with less than 2.2 kilohms/Stereo minijack (ø 3.5 mm)

DCR-TRV7/DCR-TRV7E:

E, Tourist MODEL

DV input/output

DCR-TRV7E:AEP, UK MODEL

DV output

4-pin special connector

Headphones jack

Stereo mini jack (ø 3.5 mm)

— Continued on next page —

Mini **DV** Digital Video Cassette **DIGITAL VIDEO CAMERA RECORDER**



SONY®

MIC input

Stereo minijack (ø 3.5mm):0.388mV,

DC2.5V

Input impedance 6.8 kilohms

CLANC jack

Stereo minimini jack (ø 2.5 mm)

Speaker

Dynamic-speaker

LASER LINK**Video/audio**

IR space transmission system
according to ELAJ (Electric
Industries Association of Japan)
standards

Audio carrier wave

Lch : 4.3MHz

Rch : 4.8MHz

General**Power requirements**

7.2 V (battery insertion input)

Average power consumption

4.4 W during camera recording
using viewfinder

5.8 W during camera recording
using LCD screen

Operating temperature

0°C to 40°C (32°F to 104°F)

Storage temperature

-20°C to 60°C (-4°F to 140°F)

Dimensions

Approx. 96 x 109 x 183mm

(w/h/d)

(3 7/8 x 4 3/8 x 7 1/4 in.) (w/h/d)

Mass

Approx.840g (1 lb 13 oz) excluding
the battery pack and the cassette
Approx.960g (2 lb 1 oz) including
the battery pack NP-F530,
lithium battery and cassette
DVM60

Approx.1.1kg (2 lb 6 oz) including
the battery pack NP-F730,
lithium battery and cassette
DVM60

Approx.1.2kg (2 lb 10 oz) including
the battery pack NP-F930,
lithium battery and cassette
DVM60

Microphone

Electret condenser microphone,

Stereo type

Supplied accessories

See page 6.

AC power adaptor**Power requirements**

110 to 240 V AC, 50/60 Hz

Power consumption

25 W

Output voltage

DC OUT: 8.4 V, 1.8 A in operating
mode

Battery charge terminal: 8.4 V, 1.4 A
in charge mode

Application

Sony battery pack NP-F530, NP-
F730, NP-F930 lithium ion type

Operating temperature

0°C to 40°C (32°F to 104°F)

Storage temperature

-20°C to 60°C (-4°F to 140°F)

Dimensions (Approx.)

57 x 44 x 107 mm

(2 1/4 x 1 3/4 x 4 1/4 in.)

(w/h/d)

Mass (Approx.)

190 g (7 oz)

Design and specifications are
subject to change without notice.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following
safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit board Repairing
 - Keep the temperature of the soldering iron around 270°C during repairing.
 - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
 - Be careful not to apply force on the conductor when soldering or unsoldering.



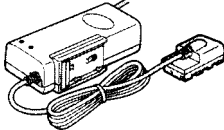
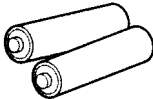
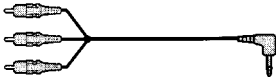
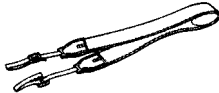
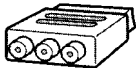

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE \triangle SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

Supplied Accessories

<p>1</p> 	<p>2</p> 	<p>3</p> 
<p>4</p> 	<p>5</p> 	<p>6</p> 
<p>7</p> 	<p>8</p> 	

- 1 Wireless Remote Commander (1)**
RMT-808 ; DCR-TRV7 / TRV7E : E, Tourist
RMT-809 ; DCR-TRV7E : AEP, UK
- 2 NP-F530 battery pack (1)**
- 3 AC power adaptor (1)**
AC-V316A ; DCR-TRV7 : Tourist
DCR-TRV7E : E, Tourist
AC-V326 ; DCR-TRV7 : US, Canadian, E
DCR-TRV7E: AEP, UK
- 4 R6 (size AA) battery for remote Commander (2)**
- 5 A/V connecting cable (1)**
- 6 Shoulder strap (1)**
- 7 21-pin adaptor (1)**
DCR-TRV7 : Tourist
DCR-TRV7E : E, Tourist
- 8 Lens cap (1)**

SERVICE NOTE

1. POWER SUPPLY DURING REPAIRS

In this unit, about 25 seconds after power is supplied (8.4V) to the battery terminal using the service power cord (J-6082-223-A), the power is shut off so that the unit cannot operate.

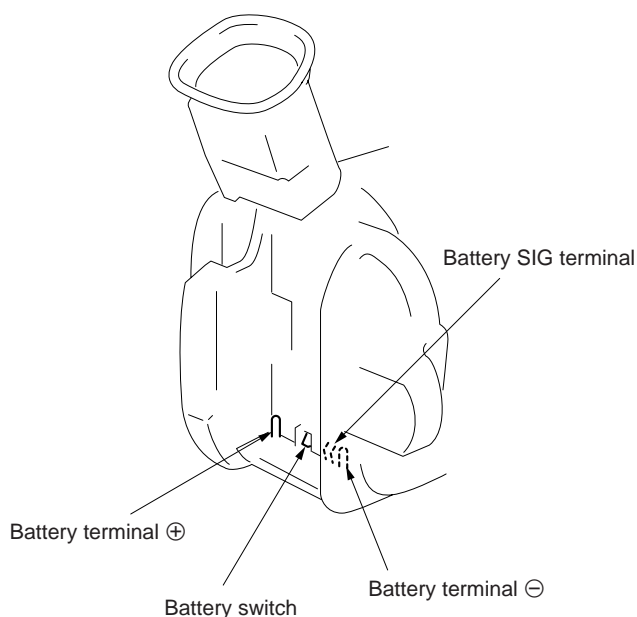
The following two methods are available to prevent this. Take note of which to use during repairs.

Method 1.

Connect the servicing remote commander RM-95 (J-6082-053-B) to the LANC jack, and set the remote commander switch to the "ADJ" side.

Method 2.

Press the following battery switch using adhesive tape, etc.



2. EJECTING WITH THE CABINET (L) ASSEMBLY REMOVED

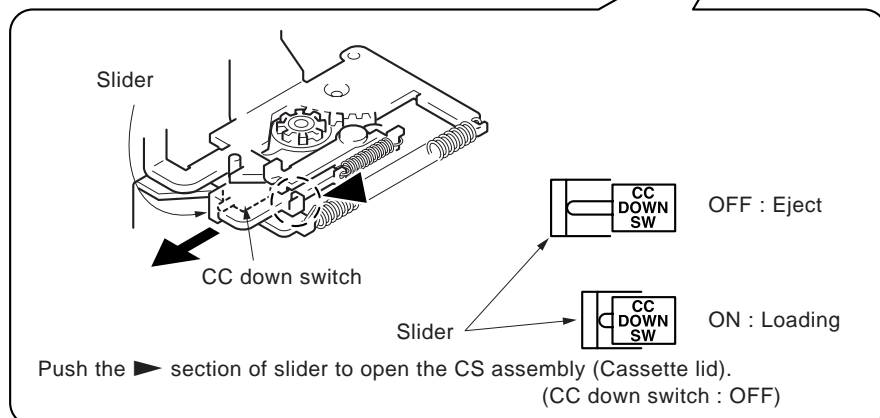
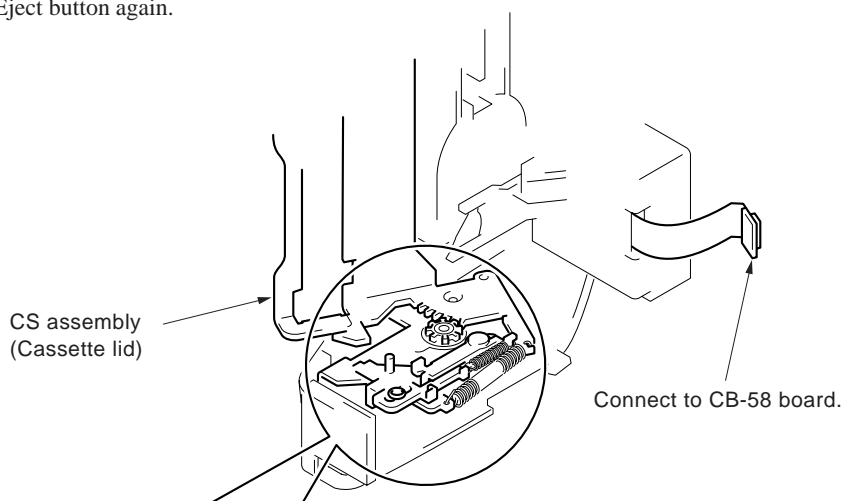
- Refer to "2. DISASSEMBLY", and supply power with the cabinet (L) assembly removed (however leave the flexible board connecting the cabinet (L) assembly and CB-58 board connected).

- Ejecting:

Operate the slider, open the CS assembly (Cassette lid), turn OFF the CC down switch, and press the Eject button again.

- Loading:

Close the CS assembly (Cassette lid).
(Turn ON the CC down switch)

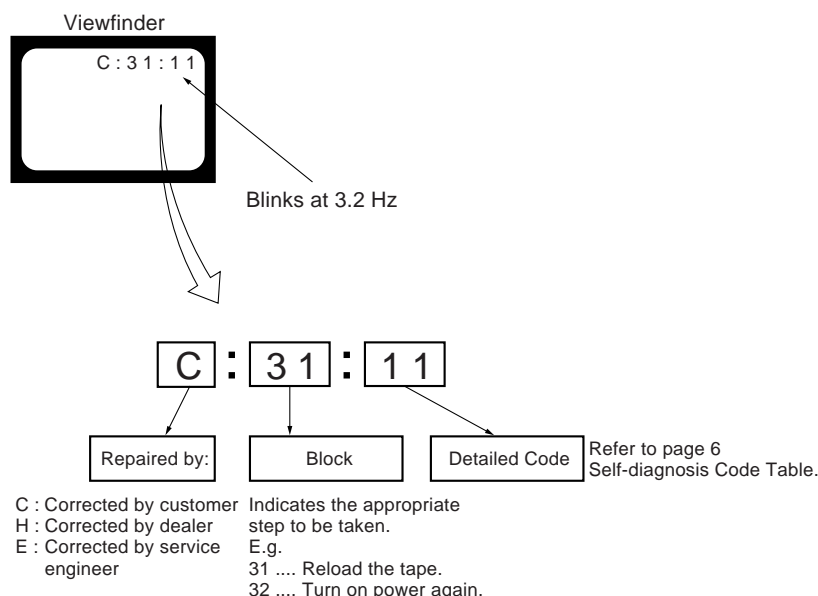


SELF-DIAGNOSIS FUNCTION

1. Self-diagnosis Function

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder what to do. This function consists of two display; self-diagnosis display and service mode display.

Details of the self-diagnosis functions are provided in the Instruction manual.



2. Self-diagnosis display

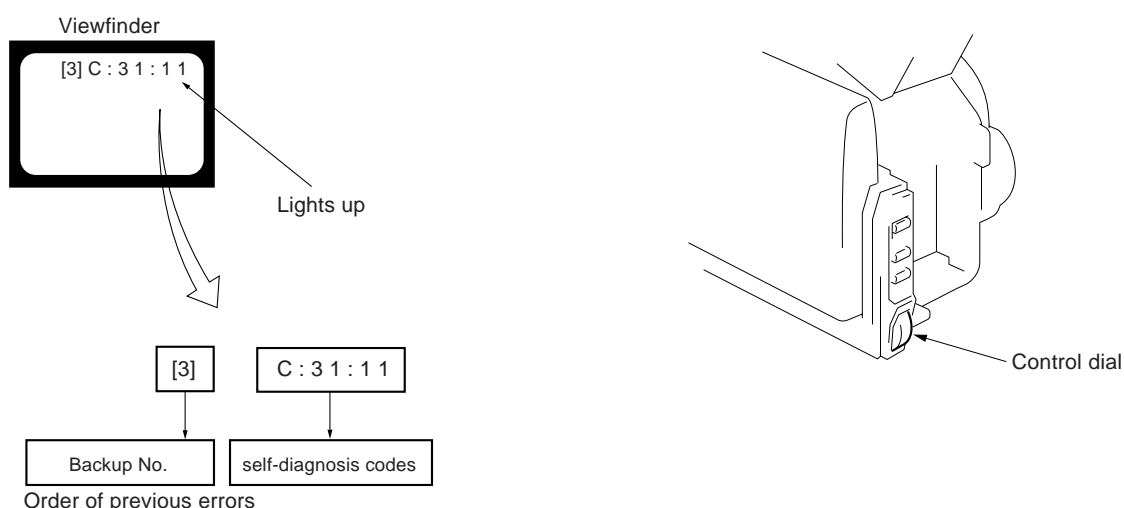
When problems occur while the unit is operating, the counter of the viewfinder shows a 4-digit display consisting of an alphabet and numbers, which blinks at 3.2 Hz. This 5-character display indicates the “repaired by:”, “block” in which the problem occurred, and “detailed code” of the problem.

3. Service Mode Display

The service mode display shows up to six self-diagnosis codes shown in the past.

3-1. Display Method

While pressing the “STOP” key, set the switch from OFF to “CAMERA” or “VTR or PLAYER”, and continue pressing the “STOP” key for 5 seconds continuously. The service mode will be displayed, and the counter will show the backup No. and the 5-character self-diagnosis codes.



3-2. Switching of Backup No.

By rotating the control dial, past self-diagnosis codes will be shown in order. The backup No. in the [] indicates the order in which the problem occurred. (If the number of problems which occurred is less than 6, only the number of problems which occurred will be shown.)

- | | |
|----------------------------|------------------------------|
| [1] : Occurred first time | [4] : Occurred fourth time |
| [2] : Occurred second time | [5] : Occurred fifth time |
| [3] : Occurred third time | [6] : Occurred the last time |

3-3. End of Display

Turning OFF the power supply will end the service mode display.

Note: The self-diagnosis display data will be backed up by the coin-type lithium battery. When this coin-type lithium battery is disconnected, the self-diagnosis data will be lost by initialization.

4. Self-diagnosis Code Table

Self-diagnosis Code					Symptom/State	Correction
Repaired by:	Block Function		Detailed Code			
C	2	1	0	0	Condensation.	Remove the cassette, and insert it again after one hour.
C	2	2	0	0	Video head is dirty.	Clean with the optional cleaning cassette.
C	2	3	0	0	Non-standard battery is used.	Use the InfoLITHIUM battery.
C	3	1	1	0	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3	1	1	1	UNLOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3	1	2	0	T reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3	1	2	1	Winding S reel fault when counting the rest of tape.	Load the tape again, and perform operations from the beginning.
C	3	1	2	2	T reel fault	Load the tape again, and perform operations from the beginning.
C	3	1	2	3	S reel fault	Load the tape again, and perform operations from the beginning.
C	3	1	2	4	T reel fault	Load the tape again, and perform operations from the beginning.
C	3	1	3	0	FG fault when starting capstan	Load the tape again, and perform operations from the beginning.
C	3	1	4	0	FG fault when starting drum	Load the tape again, and perform operations from the beginning.
C	3	1	4	2	FG fault during normal drum operations	Load the tape again, and perform operations from the beginning.
C	3	1	1	0	LOAD direction loading motor time-out	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	1	1	1	UNLOAD direction loading motor time-out	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	0	T reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	1	Winding S reel fault when counting the rest of tape.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	2	T reel fault	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	3	S reel fault	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	4	T reel fault	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	3	0	FG fault when starting capstan	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	0	FG fault when starting drum	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	2	FG fault during normal drum operations	Remove the battery or power cable, connect, and perform operations from the beginning.
E	6	1	0	0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus reset sensor (Pin ㉓ of CN101 of CD-168 board) when focusing is performed when the focus dial is rotated in the focus manual mode and the focus motor drive circuit (IC402, IC403 of CB-58 board) when the focusing is not performed.
E	6	1	1	0	Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom reset sensor (Pin ㉔ of CN101 of CD-168 board) when zooming is performed when the zoom lens is operated and the zoom motor drive circuit (IC402, IC403 of CB-58 board) when zooming is not performed.
E	6	2	0	0	Steadyshot function does not work well.(With pitch angular velocity sensor output stopped)	Inspect pitch angular velocity sensor (SE501 of CD-168 board) peripheral circuits.
E	6	2	0	1	Steadyshot function does not work well.(With yaw angular velocity sensor output stopped)	Inspect yaw angular velocity sensor (SE500 of CD-168 board) peripheral circuits.

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
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There is the color reproduction standard frame at the back of the book.

SECTION 1 GENERAL

This section is extracted
from instruction manual of
DCR-TRV7E.

Before you begin Using this manual

As you read through this manual, buttons and settings on the camcorder are shown in capital letters.
e.g. Set the POWER switch to CAMERA.
As indicated with  in the illustrations, you can hear the beep sound to confirm your operation.

Note on Cassette Memory

This camcorder is based on the DV format. You can only use mini DV cassettes with this camcorder. We recommend you to use a tape with cassette memory (CII).

The functions which depend on whether the tape has the cassette memory or not are:

- End Search (p. 22)
- Date Search (p. 52)
- Photo Search (p. 58)
- Functions you can operate only with the cassette memory are:

- Title Search (p. 56)
- Superimposing Titles (p. 68)
- Making a custom title (p. 72)
- Labeling a cassette (p. 74)

For details, see page 76.

Note on TV colour systems

TV colour systems differ from country to country. To view your recordings on a TV, you need an PAL system-based TV.

Precaution on copyright

Television programmes, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

Прежде всего Как пользоваться инструкцией

Во всем тексте данной инструкции названия кнопок и режимов работы видеокамеры выделены заглавными буквами, например: "Установите переключатель POWER в положение CAMERA".
Значок  на иллюстрациях означает, что ввод соответствующей команды подтверждается звуковым сигналом (бипер).

О видеокассетах с памятью

В Вашей видеокамере используется формат DV. Для нее подходят только мини-видеокассеты формата DV. Рекомендуем Вам использовать те из них, которые оснащены собственной электронной памятью (CII).

От наличия у кассеты собственной памяти зависит работа следующих функций:

- Поиск окончания записи (стр. 22)
- Поиск по дате (стр. 52)
- Фотопоиск (стр. 58)
- Наличие у кассеты собственной памяти обязательно для использования следующих функций:
- Поиск по титрам (стр. 56)
- Наложение титров (стр. 68)
- Ввод авторских титров (стр. 72)
- Маркировка кассет (стр. 74)

Подробнее об этом см. на стр. 76.

О системах цветного телевидения

В разных странах применяются различные системы цветного телевидения. Для просмотра Ваших видеозаписей на телевизионном экране Вам понадобится телевизор системы PAL.

Предупреждение об авторских правах

Телевизионные программы, фильмы, видеозаписи и иные материалы могут быть защищены авторским правом. Несанкционированная запись таких материалов может представлять собой нарушение законов об авторских правах.

Using this manual

Precautions on camcorder care

- The LCD screen and/or the colour viewfinder are manufactured using high-precision technology. However, there may be some tiny black points and/or bright points (red, blue or green in colour) that constantly appear on the LCD screen and/or in the viewfinder. These points are normal in the manufacturing process and do not affect the recorded picture in any way. Over 99.99% are operational for effective use.
- Do not let the camcorder get wet. Keep the camcorder away from rain and sea water. Letting the camcorder get wet may cause the unit to malfunction, and sometimes this malfunction cannot be repaired [a].
- Never leave the camcorder exposed to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight [b].

Как пользоваться инструкцией

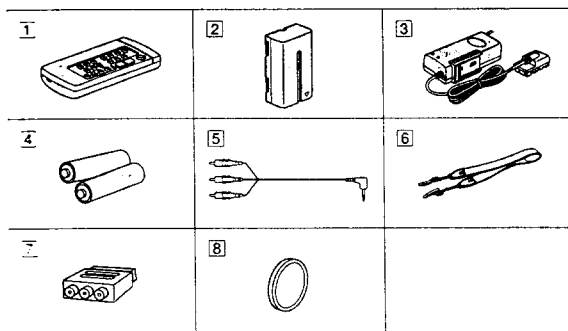
Меры предосторожности при обращении с видеокамерой

- Жидкокристаллический экран и/или цветной видоискатель видеокамеры изготовлены с применением сверхточной технологии. Тем не менее не исключено, что на экране и/или в окне видоискателя будут постоянно заметны отдельные мельчайшие черные или цветные (красные, синие либо зеленые) точки. Это нормальное явление, обусловленное техническими особенностями производственного процесса и никак не отражающееся на качестве видеозаписи. Доля нормально функционирующих элементов изображения всегда превышает 99.99%.
- Берегите видеокамеру от сырости. Не допускайте попадания на нее дождевых капель или морской воды. Намочение видеокамеры может привести к поломкам, которые не всегда удается устранить [a].
- Никогда не оставляйте видеокамеру в местах, где температура может превышать 60°C (140°F), например в автомобиле, запаркованном в солнечном месте, или под прямыми лучами солнца [b].



Checking supplied accessories

Check that the following accessories are supplied with your camcorder.



- 1 Wireless Remote Commander (1) (p. 111)
- 2 NP-F530 battery pack (1) (p. 7)
- 3 AC-V326 AC power adaptor (1) (p. 7, 27)
The shape of the plug varies from region to region.
- 4 AA (size AA) battery for Remote Commander (2) (p. 112)
- 5 A/V connecting cable (1) (p. 113)
- 6 Shoulder strap (1) (p. 51)
- 7 21-pin adaptor (1) (p. 51)
- 8 Lens cap (1) (p. 12)

Contents of the recording cannot be compensated if recording or playback is not made due to a malfunction of the camcorder, tape, etc.

Проверка комплектации

Убедитесь, что в комплект Вашей видеокамеры входят следующие принадлежности.

- 1 Беспроводной пульт дистанционного управления (1) (стр. 111)
- 2 Аккумуляторная батарея NP-F530 (1) (стр. 7)
- 3 Адаптер сетевого питания AC-V326 (1) (стр. 7, 27)
Конструкция сетевой вилки зависит от географического региона.
- 4 Батарейка R6 (размер AA) для пульта дистанционного управления (2) (стр. 112)
- 5 Соединительный аудио/видеокабель (1) (стр. 50, 65)
- 6 Плечевой ремень (1) (стр. 51)
- 7 Переходник с 21-штырьковым разъемом (1) (стр. 51)
- 8 Заглушка объектива (1) (стр. 12)

В случае невозможности видеосъемки или воспроизведения записи по причине неисправности видеокамеры, видеокассеты и т.п. компенсация не предоставляется.

Getting started Charging and installing the battery pack

Before using your camcorder, you first need to charge and install the battery pack. To charge the battery pack, use the supplied AC power adaptor.
This camcorder operates with the "InfoLITHIUM" battery. If you use any other battery to operate your camcorder, the camcorder may not operate or the battery life may be shortened.

"InfoLITHIUM" is a trademark of Sony Corporation.

Charging the battery pack

Charge the battery pack on a flat surface without vibration.

- (1) Connect the mains lead to mains.
- (2) Align the surface of the battery pack indicated by the ► mark with the edge of the terminal shutter of the AC power adaptor. Then fit and slide the battery pack in the direction of the arrow. The CHARGE lamp (orange) lights up. Charging begins.

When the CHARGE lamp goes out, normal charge is completed. For full charge, which allows you to use the battery longer than usual, leave the battery pack in place for approximately one hour. Unplug the unit from the mains, then remove the battery pack and install it into the camcorder. You can also use the battery pack before it is completely charged.

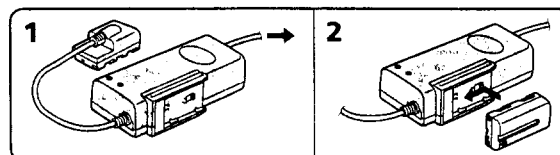
Подготовка к пользованию Заряжание и установка аккумуляторной батареи

Прежде, чем пользоваться видеокамерой, Вам необходимо зарядить и установить аккумуляторную батарею. Для зарядки батареи используйте прилагаемый адаптер сетевого питания.
Данная видеокамера рассчитана на питание от батареи типа "InfoLITHIUM". Использование аккумуляторных батарей других типов может привести к отказу видеокамеры или к необходимости более частой подзарядки батареи.

"InfoLITHIUM" - торговая марка компании Sony Corporation.

Заряжание аккумуляторной батареи

Заряжать батарею следует на горизонтальной поверхности, не подверженной вибрации.
(1) Подсоедините провод питания к сети.
(2) Совместите сторону корпуса батареи, обозначенную символом ►, с краем контактной шины адаптера сетевого питания, после чего введите ее в паз и продвиньте в направлении, указанным стрелкой. При этом загорается оранжевая индикаторная лампочка CHARGE, и батарея начинает заряжаться.
Когда лампочка CHARGE гаснет, это указывает на завершение стандартного цикла зарядки батареи. Для зарядки ее на полную емкость, что позволяет пользоваться видеокамерой дольше обычного, батарею следует оставить подсоединенной к адаптеру еще примерно на один час. Отключите адаптер от сети, а затем снимите батарею и подсоедините ее к видеокамере. Батарею можно начинать пользоваться также не дожидаясь, пока она зарядится полностью.



Charging and installing the battery pack

Charging time

Battery pack	Charging time *
NP-F530 (supplied)	170 (110)
NP-F730	250 (190)
NP-F930	330 (270)

The time required for a normal charge is indicated in parentheses.

* Approximate minutes to charge an empty battery pack using the supplied AC power adaptor. (Lower temperatures require a longer charging time.)

Battery life

While using with viewfinder

Battery pack	Continuous recording time **	Typical recording time ***
NP-F530 (supplied)	110 (100)	80 (70)
NP-F730	255 (230)	190 (170)
NP-F930	400 (360)	220 (195)

While using with LCD

Battery pack	Continuous recording time **	Typical recording time ***	Playing time with LCD
NP-F530 (supplied)	80 (70)	40 (35)	85 (75)
NP-F730	190 (170)	100 (90)	195 (175)
NP-F930	295 (265)	160 (145)	300 (270)

Numbers in parentheses indicate the time when you use a normally charged battery. Battery life will be shorter if you use the camcorder in a cold environment.

* Approximate continuous recording time indoors.

** Approximate minutes when recording while you repeat recording start/stop, zooming and turning the power on/off. The actual battery life may be shorter.

Зарядание и установка аккумуляторной батареи

Продолжительность зарядки

Модель батареи	Продолжительность зарядки*
NP-F530 (прилагается)	170 (110)
NP-F730	250 (190)
NP-F930	330 (270)

В скобках указана продолжительность стандартного цикла зарядки.

* Примерное время в минутах, необходимое для зарядки разряженной батареи с помощью прилагаемого адаптера сетевого питания (при низких температурах продолжительность зарядки увеличивается).

Время работы от заряженной батареи

При использовании видоискателя

Модель батареи	Время непрерывной съемки**	Время съемки в реальном режиме***
NP-F530 (прилагается)	110 (100)	80 (70)
NP-F730	255 (230)	190 (170)
NP-F930	400 (360)	220 (195)

При использовании жидкокристаллического экрана

Модель батареи	Время непрерывной съемки**	Время съемки в реальном режиме***	Время воспроизведения на жидкокристаллическом экране
NP-F530 (прилагается)	80 (70)	40 (35)	85 (75)
NP-F730	190 (170)	100 (90)	195 (175)
NP-F930	295 (265)	160 (145)	300 (270)

В скобках указано время работы при стандартном заряде батареи.

При низких температурах батарея разряжается быстрее.

* Примерная продолжительность непрерывной съемки в закрытом помещении.

** Примерная продолжительность экранного времени при съемке с неоднократными остановками, изменениями фокусного расстояния объектива, включениями и выключениями питания. Заряд батареи при этом может расходоваться быстрее.

Charging and installing the battery pack

Notes on remaining battery time indication during recording

- Remaining battery time is displayed in the viewfinder or on the LCD screen. However, the indication may not be displayed properly, depending on using conditions and circumstances.
- When you close the LCD panel and open it again, it takes about 1 minute for the correct remaining time to be displayed.

To remove the battery pack

Slide the battery pack in the direction of the arrow.

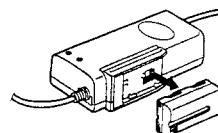
Зарядание и установка аккумуляторной батареи

Индикатор оставшегося заряда батареи во время съемки

- Величина оставшегося заряда батареи указывается в окне видоискателя или на жидкокристаллическом экране. Однако в зависимости от условий и обстоятельств съемки показания этого индикатора могут быть неточными.
- После закрытия и повторного раскрытия жидкокристаллической панели точную информацию о величине оставшегося заряда можно получить лишь спустя примерно 1 минуту.

Снятие аккумуляторной батареи

Сдвиньте батарею в направлении, указанном стрелкой.



Notes on charging the battery pack

- The CHARGE lamp will remain lit for a while even if the battery pack is removed and the mains lead is unplugged after charging the battery pack. This is normal.
- If the CHARGE lamp does not light, disconnect the mains lead. After about one minute, reconnect the mains lead again.
- You cannot charge the battery pack while you operate the camcorder using the AC power adaptor.
- When a fully charged battery pack is installed, the CHARGE lamp will light once, then go out.

О процессе зарядки батареи

- Индикаторная лампочка CHARGE продолжает светиться еще некоторое время после того, как заряженная батарея отсоединена от сети. Это нормально.
- Если лампочка CHARGE не загорается, отключите провод питания от сети и вновь включите его в сеть примерно через одну минуту.
- Во время зарядки аккумуляторной батареи сетевым адаптером нельзя пользоваться для питания видеокамеры.
- При подключении к адаптеру полностью заряженной батареи лампочка CHARGE загорается на короткое время, а затем гаснет.

Getting started / Подготовка к использованию

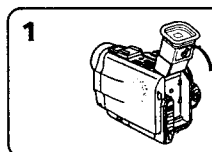
9

Charging and installing the battery pack

Installing the battery pack

- 1 Lift up the viewfinder.
- 2 Insert the battery pack in the direction of the mark on the battery pack. Slide the battery pack down until it fits in.

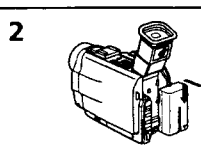
Attach the battery pack to the camcorder securely.



Установка аккумуляторной батареи

- 1 Поднимите видоискатель.
- 2 Введите батарею в приемный паз, соригинируя ее в направлении, указанном знаком на корпусе батареи. Опустите батарею вниз до тех пор, пока не защелкнется фиксатор.

Следите за надежностью соединения батареи с видеокамерой.



Notes on installing the NP-F730/F930 battery pack

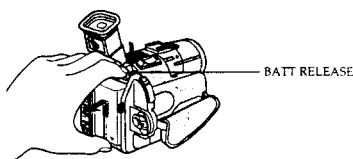
- Use the camcorder while lifting up the viewfinder slightly.
- Do not forcibly put down the viewfinder. It may damage the camcorder.

Note on the battery pack

Do not carry the camcorder by grasping the battery pack.

To remove the battery pack

While pressing BATT RELEASE, slide the battery pack in the direction of the arrow.



При установке батарей NP-F730/F930

- Используйте видеокамерой, слегка приподняв видоискатель.
- Не применяйте силу, опуская видоискатель, чтобы не повредить камеру.

Еще об аккумуляторных батареях

Не носите видеокамеру, держа ее за батарею.

Снятие аккумуляторной батареи

Нажимая на рычажок фиксатора BATT RELEASE, сдвиньте батарею в направлении, указанном стрелкой.

You can look at the demonstration of the functions available with this camcorder (p. 115).

Вы можете увидеть демонстрацию функций, которыми оснащена Ваша видеокамера (стр. 115).

10

Inserting a cassette

You can use mini DV cassette with "iD" logo*.

Make sure that the power source is installed.

- 1 Slide OPEN/EJECT near the grip strap in the direction of the arrow and open the lid. The cassette compartment automatically lifts up and opens.
- 2 Insert a cassette with the window facing out.
- 3 Close the cassette compartment by pressing the "iD" mark on the cassette compartment. The cassette compartment automatically goes down.
- 4 Close the lid until it clicks.

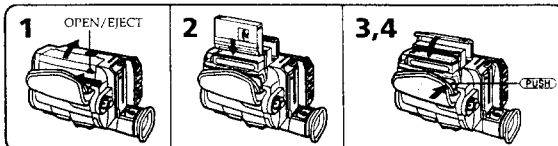
* "iD" is a trademark.

Установка видеокассеты

Для Вашей камеры подходят только мини-видеокассеты DV, помеченные логотипом "iD".

- 1 Проверьте, подключено ли питание.
- 1 Передвиньте расположенный возле ручного ремня рычажок OPEN/EJECT в направлении стрелки и откройте крышку кассетоприемника. При этом кассетоприемник автоматически выдвигается вверх и раскрывается.
- 2 Установите в кассетоприемник кассету окном наружу.
- 3 Закройте кассетоприемник нажатием на него в точке, указанной знаком "iD". Кассетоприемник автоматически опускается на место.
- 4 Опустите и защелкните крышку.

* "iD" - торговая марка.



Notes

- Before you close the lid of the cassette compartment, make sure the cassette compartment is completely pulled down.
- When you open the lid immediately after you install the battery, the cassette compartment may not lift up. Close the lid and open it again.

To eject the cassette

Follow the procedure above and in step 2, take out the cassette.

To Prevent Accidental Erasure

Slide and open the tab on the cassette to expose the red mark. If you try to record with the red mark exposed, the "E" and "A" indicators flash on the LCD screen or in the viewfinder, and you cannot record on the tape. To re-record on this tape, slide and close the tab to cover the red mark.

Примечания

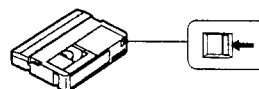
- Прежде чем закрывать крышку кассетоприемника, убедитесь, что он окончательно вернулся в нижнее положение.
- Если Вы открываете крышку сразу же после установки батареи, то выдвижения кассетоприемника может не произойти. В этом случае закройте крышку и откройте ее повторно.

Извлечение видеокассеты

Следуйте указаниям, приведенным выше, извлеките кассету в ходе этапа 2.

Предотвращение случайного стирания записи

Сдвиньте предохранительную задвижку на кассете, чтобы стала видна красная пластинка. Теперь при попытке записывать на эту кассету в окне видоискателя или на жидкокристаллическом экране начинают мигать индикаторы "E" и "A", а запись не включается. Чтобы сделать на кассете новую запись, передвиньте задвижку так, чтобы красная пластинка оказалась закрытой.



Getting started / Подготовка к использованию

11

Basic operations

Camera recording

Make sure that the power source is installed and a cassette is inserted and that the START/STOP MODE switch inside the LCD panel is set to Δ . Before you record one-time events, you may want to make a trial recording to make sure that the camcorder is working correctly.

When you use the camcorder for the first time, power on it and reset the date and time to your time before you start recording (p. 79).

To save battery power, the picture in the viewfinder appears only when you bring your face close to the viewfinder (finder power save).

(1) Remove the lens cap and hook it onto the grip strap.

(2) While pressing the small green button on the POWER switch, set it to CAMERA. The camcorder is set to Standby mode.

(3) Press START/STOP. The camcorder starts recording. "REC" appears in the viewfinder. The camera recording lamp on the front of the camcorder also lights up.

You can also select Recording mode, SP (standard play) mode or LP (long play) mode. Set REC MODE in the menu system according to the length of your planned recording before you start.

Повседневное пользование

Видеосъемка

Убедитесь в том, что камера подключена к источнику питания, что в нее установлена видеокассета и что переключатель START/STOP MODE на внутренней стороне жидкокристаллической панели установлен в положение Δ . Перед съемкой особо ценных эпизодов имеет смысл заранее опробовать видеоканал, чтобы удостовериться в ее нормальном функционировании.

Прежде, чем пользоваться камерой впервые, включите ее и установите текущую дату и точное время (стр. 79).

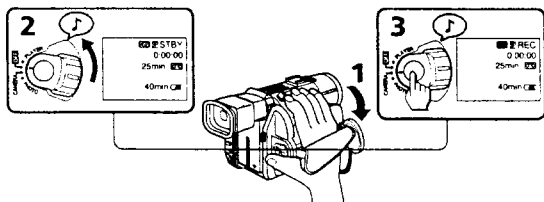
В целях экономии заряда батареи экран видеосъемателя включается только при приближении окуляра к лицу (экономия питания видеосъемателя).

(1) Снимите заглушку объектива и прикрепите ее к ручному ремню.

(2) Удерживая в нажатом положении маленькую зеленую кнопку на переключателе POWER, переведите его в положение CAMERA. При этом видеосъематель переходит в режим ожидания начала записи.

(3) Нажмите кнопку START/STOP. Видеосъематель начинает съемку. В окне видеосъемателя появляется указатель "REC". При этом загорается также индикаторная лампочка записи на передней стороне видеосъемателя.

Вы можете выбирать между стандартной (SP) и медленной (LP) скоростью видеосъемки. Исходя из планируемой продолжительности съемки, выберите перед ее началом нужную скорость записи через позицию REC MODE в меню параметров.



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Camera recording

Видеосъемка

To stop recording momentarily [a]

Press START/STOP. The "STBY" indicator appears in the viewfinder (Standby mode).

To finish recording [b]

Press START/STOP again to stop recording. Set the POWER switch to OFF. Then, eject the cassette and remove the battery pack.



To focus the viewfinder lens

If you cannot see the indicators in the viewfinder clearly, or after someone else has used the camcorder, focus the viewfinder lens. Move the viewfinder lens adjustment lever so that the indicators in the viewfinder come into sharp focus.

Быстрое включение записи [a]

Нажмите кнопку START/STOP. В окне видеосъемателя появляется индикатор "STBY" (режим ожидания).

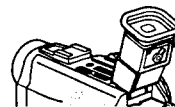
Прекращение записи [b]

Для прекращения записи нажмите кнопку START/STOP еще раз. Переведите переключатель POWER в положение OFF. После этого извлеките кассету и снимите аккумуляторную батарею.



Подстройка окуляра видеосъемателя

Если Вам трудно различить индикаторы в окне видеосъемателя, или если перед Вами камерой пользовался кто-то другой, произведите подстройку окуляра видеосъемателя. Поворотом регулятора подстройки окуляра добейтесь того, чтобы индикаторы в окне видеосъемателя стали видны отчетливо и резко.



Note on Standby mode

If you leave the camcorder in Standby mode for 5 minutes while the cassette is inserted, the camcorder turns off automatically. This prevents wearing down the battery and wearing out the tape. To resume Standby mode, while pressing the small green button on the POWER switch, set it to OFF once, and then to CAMERA. To start recording, press START/STOP.

Note on recording mode

This camcorder records and plays back in SP (standard play) mode and in LP (long play) mode. Select SP or LP in the menu system. In LP mode, you can record 1.5 times as long as in SP mode.

О режиме ожидания начала записи

Если оставить видеосъематель с установленной в ней кассетой в режиме ожидания более чем на 5 минут, она автоматически выключится. Это экономит заряд батареи и сокращает износ видеоленты. Чтобы вернуть камеру в режим ожидания начала записи, переведите переключатель POWER, удерживая на нем в нажатом положении маленькую зеленую кнопку, в положение OFF, а затем снова в положение CAMERA. Чтобы начать съемку, нажмите кнопку START/STOP.

О режиме скорости

Ваша видеосъемка позволяет вести съемку и воспроизводить видеозаписи в режиме стандартной (SP) и медленной (LP) скорости. Выбор между стандартной и медленной скоростью осуществляется с помощью меню параметров. Продолжительность записи в режиме LP в 1.5 раза превышает время записи в режиме SP.

Basic operation / Повседневное пользование

Camera recording

Видеосъемка

Notes on LP mode

- We recommend to use this camcorder to play back a tape recorded on this camcorder. If a tape recorded on other camcorder is played back on this camcorder, or vice versa, mosaic-pattern noise may appear.
- When you record in SP and LP modes on one tape or you record some scenes in LP mode, the playback picture may be distorted or the time code may not be written properly between scenes.
- When you record in LP mode, we recommend to use a Sony mini DV tape cassette.
- You cannot make audio dubbing on a tape recorded in LP mode. Use the SP mode for the tape to be audio dubbed.

Notes on the time code

- The time code indicates the recording or playback time. "0:00:00" (hours : minutes : seconds) in CAMERA and PHOTOMODE and "0:00:00:00" (hours : minutes : seconds : frames) in PLAYER mode.
- Be sure not to make a blank portion when recording, because the time code will start from "0:00:00:00" again.
- This camcorder uses the drop frame mode.

Note on the beep sound

As indicated with Δ in the illustrations, a beep sounds when you turn the power on or when you start recording, and two beeps sound when you stop recording, confirming the operation. Several beeps also sound as a warning of any unusual condition of the camcorder.

Note that the beep sound is not recorded on the tape. If you do not want to hear the beep sound, select "OFF" in the menu system.

Notes on finder power save

- The recording continues even when the picture in the viewfinder disappears during recording.
- If you set VF PW-SAVE to OFF in the menu system, the picture in the viewfinder does not disappear even when you turn your face away from the viewfinder.

Note on remaining tape indicator

The indicator may not be displayed accurately depending on the tape. Though the indicator does not appear at the time of recording, it will appear in a few seconds.

О скорости LP

- Для воспроизведения видеозаписей, снятых данной видеосъемкой, рекомендуется использовать ее же. При воспроизведении на другой видеосъемке записей, сделанных другой видеосъемкой, возможно появление мозаичных искажений изображения.
- Если на одной и той же видеоленте имеется запись, сделанная как в режиме SP, так и в режиме LP, или если режим LP используется в отдельных фрагментах записи, то это может привести к искажениям при воспроизведении или неверной регистрации хронометрических кодов между фрагментами.
- Для съемки в режиме LP рекомендуем Вам пользоваться мини-видеокассетами DV производства компании Sony.

- Если видеозапись сделана в режиме LP, то наложить на нее впоследствии звуковое сопровождение будет невозможно. Записи, предназначенные для последующего наложения звука, следует делать в режиме SP.

О хронометрическом коде

- Хронометрический код служит для отсчета времени записи или воспроизведения в формате "0:00:00" (час : минута : секунда) в режимах CAMERA и PHOTOMODE и "0:00:00:00" (час : минута : секунда : кадр) в режиме PLAYER.
- Во время съемки старайтесь не оставлять на ленте незаписанных участков, так как после них хронометрический код начинает вновь отсчитываться с "0:00:00:00".
- В данной видеосъемке используется режим пропуску кадра.

О сигнале бипера

Как указывает значок Δ на иллюстрациях, однократный звуковой сигнал подается при включении камеры и начале съемки, а двукратный - при окончании съемки, подтверждая ввод соответствующих команд. Бипер также подает несколько последовательных сигналов в виде предупреждения о так или иначе нарушениях режима работы камеры. Следует иметь в виду, что сигналы бипера на видеоленте не записываются. При желании их можно отключить, выбрав в меню параметров позицию "OFF".

Об экономии питания видеосъемателя

- Исчезновение изображения в окне видеосъемателя во время съемки не означает ее прекращения.
- Если установить переключатель VF PW-SAVE в меню параметров в положение OFF, то изображение в окне видеосъемателя не будет пропадать даже тогда, когда Вы отдалите окуляр от лица.

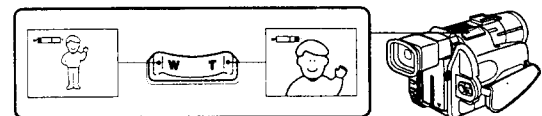
Об индикаторе оставшейся длины ленты. Точность показаний этого индикатора зависит от типа видеокассеты. При включении записи он появляется на экране не сразу, а лишь через несколько секунд.

Camera recording

Видеосъемка

Using the zoom feature

Zooming is a recording technique that lets you change the size of the subject in the scene. For more professional-looking recordings, use the zoom function sparingly. "T" side: for telephoto (subject appears closer) "W" side: for wide-angle (subject appears farther away)



Zooming speed (Variable speed zooming)

Press the power zoom switch a little for a relatively slow zoom; press it still more for a high-speed zoom.

When you shoot a subject using a telephoto zoom

If you cannot get a sharp focus while in extreme telephoto zoom, press the "W" side of the power zoom switch until the focus is sharp. You can shoot a subject that is at least about 80 cm (about 2.5/8 feet) away from the lens surface in the telephoto position, or about 1 cm (about 1/2 inch) away in the wide-angle position.

Пользование трансфокатором ("Наезд")

"Наездом" называется операторский прием, при котором изменяются размеры объекта съемки в кадре. Чтобы Ваши видеоснимки выглядели более профессионально, не злоупотребляйте этим приемом.

Сторона "Т" - съемка телеобъективом (приближение объекта съемки).

Сторона "W" - широкоугольная съемка (отдаление объекта).

Скорость "наезда" ("Наезд" с переменной скоростью)

Сравнительно медленное приближение или отдаление достигается легким нажатием на рычажок управления трансфокатором; при более сильном нажатии скорость приближения или отдаления возрастает.

Съемка телеобъективом

Если при максимальном "приближении" объекта съемки с помощью телеобъектива Вам не удается четко сфокусировать изображение, нажимайте сторону "W" рычажка управления трансфокатором до тех пор, пока изображение не станет резким. Примерное расстояние от поверхности линзы до объекта при съемке телеобъективом должно составлять не менее 80 см, а при широкоугольной съемке - не менее 1 см.

Basic operation / Повседневное пользование

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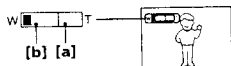
15

Camera recording

Видеосъемка

Notes on digital zoom

- More than 10x zoom is performed digitally, and the picture quality deteriorates as you go toward the "T" side. If you do not want to use the digital zoom, set the D ZOOM function to OFF in the menu system.
- The right side [a] of the power zoom indicator shows the digital zooming zone, and the left side [b] shows the optical zooming zone. If you set the D ZOOM function to OFF, the [a] zone disappears.



Selecting the start/stop mode

Your camcorder has two modes besides normal start/stop mode. These modes enable you to take a series of quick shots resulting in a lively video.

- (1) While pressing PUSH OPEN, open the LCD panel.
- (2) Set START/STOP MODE to the desired mode.
 - Recording starts when you press START/STOP, and stops when you press it again (normal mode).
 - **ANTI GROUND SHOOTING**: The camcorder records only while you press down START/STOP so that you can avoid recording unnecessary scenes.
 - **SSEC**: When you press START/STOP, the camcorder records for 5 seconds and then stops automatically.
- (3) Press START/STOP. Recording starts.

If you selected SSEC, five dots appear in the viewfinder or on the LCD screen. The dots disappear at a rate of one per second as illustrated below. When five seconds elapse and all the dots disappear, the camcorder switches to Standby mode automatically.

О цифровом телеобъективе

- Увеличение с помощью дигитального телеобъектива достигается за счет цифровой обработки изображения, вследствие чего при дальнейшем нажатии на сторону "Т" рычажка управления качество изображения ухудшается. Если Вы не желаете пользоваться цифровым увеличением, установите переключатель функции D ZOOM в меню параметров в положение OFF.
- Правая часть [a] индикатора фокусного расстояния представляет собой область цифрового увеличения, а левая [b] - область оптического увеличения. При установке функции D ZOOM в положение OFF часть [a] индикатора исчезает.

Выбор режима включения/выключения съемки

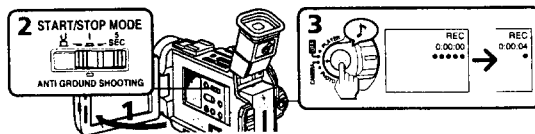
Помимо обычного режима включения и

- выключения съемки Ваша видеокамера имеет два других, которые позволяют осуществлять быструю смену кадров, оживляющую Ваши видеозаписи.
- (1) Нажимая PUSH OPEN, раскройте жидкокристаллическую панель.
 - (2) Выберите нужный режим с помощью переключателя START/STOP MODE.
 - Съемка начинается при нажатии кнопки START/STOP и прекращается повторным нажатием той же кнопки (обычный режим).
 - **ANTI GROUND SHOOTING**: Съемка продолжается лишь до тех пор, пока Вы удерживаете кнопку START/STOP в нажатом положении - это помогает избежать случайной записи ненужных фрагментов, если Вы забудете выключить камеру.
 - **SSEC**: При нажатии кнопки START/STOP съемка включается на 5 секунд, а затем прекращается автоматически.
 - (3) Нажмите кнопку START/STOP. Камера начинает съемку.

Если Вы выбрали режим SSEC, то в видоискателе при этом появляются пять точек. Затем они последовательно исчезают с интервалом в одну секунду, как показано на рисунке ниже. По истечении пяти секунд, когда точки исчезают с дисплея, видеокамера автоматически переходит в режим ожидания начала съемки.

Camera recording

Видеосъемка



To extend the recording time in SSEC mode

Press START/STOP again before all the dots disappear. Recording continues for about 5 seconds from the moment you press START/STOP.

Note on SSEC recording

If you have turned off the indicators on the LCD screen, the dots do not appear.

Продление времени съемки в режиме SSEC

Нажмите кнопку START/STOP повторно до того, как в видоискателе исчезнут все пять точек. Запись будет продолжена в течение еще около пяти секунд с момента повторного нажатия кнопки START/STOP.

О съемке в режиме SSEC

Если Вы отключили вывод индикаторов на жидкокристаллический экран, точки на нем видны не будут.

Shooting with the LCD screen

You can also record the picture while looking at the LCD screen.

When using the LCD screen, the viewfinder turns off automatically except in mirror mode. You cannot monitor the sound from the speaker during recording.

- (1) When pressing PUSH OPEN, open the LCD panel.
 - The LCD panel moves about 90 degrees to this side and about 210 degrees to the other side.
 - To adjust the brightness of the LCD screen, press LCD BRIGHT + or -.
- (2) Adjust angle of the LCD panel.
 - The battery life is longer when the LCD panel is closed. Use the viewfinder instead of the LCD screen to save the battery power.

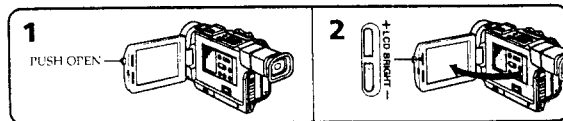
Съемка с использованием жидкокристаллического экрана

Вы можете также вести запись изображения, следя за ним по жидкокристаллическому экрану.

При использовании жидкокристаллического экрана видоискатель автоматически отключается, кроме случаев, когда экран используется в зеркальном режиме. Пользоваться громкоговорителем для контроля записи звука при съемке невозможно.

- (1) Нажимая на PUSH OPEN, раскройте жидкокристаллическую панель.
- (2) Отрегулируйте угол расположения панели.
 - Панель можно повернуть приблизительно на 90 градусов в одной плоскости и на 210 градусов - в другой.
 - Яркость жидкокристаллического экрана регулируется кнопками LCD BRIGHT + и -.

Заряд батареи расходуется более экономно при закрытой жидкокристаллической панели. Чтобы продлить время съемки, пользуйтесь вместо жидкокристаллического экрана видоискателем.

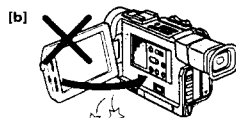
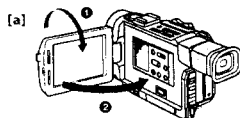


Camera recording

Видеосъемка

Notes on the LCD panel

- When closing the LCD panel, turn it vertically until it clicks [a].
- When turning the LCD panel, turn it always vertically; otherwise, the camcorder body may be damaged or the LCD panel may not close properly [b].
- Close the LCD panel completely when not in use.
- Do not push nor touch the LCD when moving the LCD panel.
- You may find it difficult to view the LCD screen due to glare when using the camcorder outdoors.

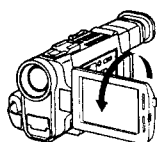


Letting the subject monitor the shot

You can turn the LCD panel over so that it faces the other way and you can let the subject monitor the shot while shooting with the viewfinder.

Turn the LCD panel up vertically. When you turn the LCD panel 180 degrees, the indicator appears on the LCD screen (mirror mode) and the time code and remaining tape indicators disappear.

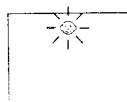
You can also use the Remote Commander.



Наблюдение за собственным положением в кадре

Ведя съемку через видоискатель, можно перевернуть жидкокристаллическую панель экраном к тому, кого Вы снимаете, что позволит ему наблюдать за собственным положением в кадре.

Поверните жидкокристаллическую панель вокруг горизонтальной оси. При ее повороте на 180 градусов на жидкокристаллическом экране появляется индикатор (зеркальный режим), а хронометрический код и индикатор оставшейся ленты исчезают. Вы можете пользоваться также пультом дистанционного управления.



Camera recording

Видеосъемка

To cancel mirror mode

Turn the LCD panel down toward the camcorder body.

Notes on mirror mode

- When you turn the LCD panel about 90 degrees to 210 degrees, the camcorder enters mirror mode.
- Using the mirror mode, you can record yourself while watching yourself on the LCD [a].
- The picture on the LCD looks like a mirror-image while recording in mirror mode. The STBY indicator appears as and REC as . Other indicators appear as mirror-image. Some indicators may not appear in mirror mode.
- While recording in mirror mode, you cannot operate the following functions: MENU, TITLE and ZERO SET MEMORY on the Remote Commander.

Отмена зеркального режима

Поверните жидкокристаллическую панель обратно к корпусу видеокамеры.

О зеркальном режиме

- Видеокамера переходит в зеркальный режим при повороте жидкокристаллической панели на угол примерно от 90 до 210 градусов.
- Используя зеркальный режим, Вы можете снимать себя, одновременно наблюдая с помощью камеры изображение на жидкокристаллическом экране [a].
- При съемке в зеркальном режиме на жидкокристаллический экран выводится "зеркальное отражение" кадра, записываемого видеокамерой. При этом вместо индикатора STBY на экране виден символ , а вместо индикатора REC - символ . Остальные индикаторы выводятся на экран в виде зеркального отражения. Некоторые из индикаторов в зеркальном режиме отключаются.
- При съемке в зеркальном режиме не действуют функции MENU, TITLE и ZERO SET MEMORY на пульте дистанционного управления.



Hints for better shooting

For hand-held shots, you will get better results by holding the camcorder according to the following suggestions:

- Hold the camcorder firmly and secure it with the grip strap so that you can easily manipulate the controls with your thumb. [a]



- Place your elbows against your side.
- Place your left hand under the camcorder to support it.
- Place your eye firmly against the viewfinder eyecup.
- Be sure not to touch the built-in microphone.
- Use the LCD panel frame or the viewfinder frame as a guide to determine the horizontal plane.
- You can also record in a low position to get an interesting angle. Lift the viewfinder up for record from a low position. [b]
- You can also record in a low position or even in a high position using the LCD panel. [c]
- When you use the LCD screen outdoors in direct sunlight, the LCD screen may be difficult to see. If this happens, we recommend that you use the viewfinder.

[b]



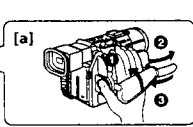
[c]



Советы начинающему оператору

При съемке с рук наилучших результатов можно добиться, держа видеокамеру следующим образом:

- Крепко возьмите камеру рукой, пропущенной под ручной ремень, так, чтобы Ваш большой палец мог легко манипулировать кнопками управления [a].



- Прижмите локти к корпусу
- Левой рукой поддерживайте видеокамеру снизу
- Приблизьте окуляр видоискателя вплотную к глазу
- Следите за тем, чтобы не прикасаться к встроенному микрофону.
- Для горизонтального выравнивания кадра ориентируйтесь по рамке жидкокристаллической панели или рамке видоискателя
- Для получения интересных ракурсов видеосъемку можно также вести из положения "снизу". При этом видоискатель должен быть повернут вверх [b].
- Съемку не только "снизу", но и "сверху" можно вести также с помощью жидкокристаллической панели [c].
- При использовании жидкокристаллической панелью вне помещений, под прямыми лучами солнца, изображение на жидкокристаллическом экране может становиться трудноразличимым. В таких случаях рекомендуем Вам пользоваться видоискателем.

Hints for better shooting

Place the camcorder on a flat surface or use a tripod

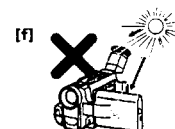
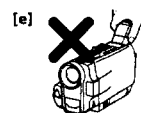
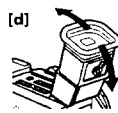
Try placing the camcorder on a table top or any other flat surface of suitable height. If you have a tripod for a still camera, you can also use it with the camcorder. When attaching a non-Sony tripod, make sure that the length of the tripod screw is less than 6.5 mm (9/32 inches). Otherwise, you cannot attach the tripod securely and the screw may damage the camcorder.

If you wear glasses

You can bend back the eyecup to get a better view of viewfinder [d]

Cautions on the LCD panel and on the viewfinder

- Do not pick up the camcorder by the viewfinder or the LCD panel [e].
- Do not place the camcorder so as to point the viewfinder or the LCD panel toward the sun. The inside of the viewfinder or the LCD panel may be damaged. Be careful when placing the camcorder under sunlight or by a window [f].



Советы начинающему оператору

Устанавливайте видеокамеру на горизонтальную поверхность или используйте штативом.

Попробуйте поставить видеокамеру на стол или другую ровную поверхность на подходящей высоте. Если у Вас есть штатив для фотоаппарата, то им можно воспользоваться и для съемок видеокамерой. Прежде чем присоединять к камере штативы производства других фирм, проверьте длину крепежного винта. Она не должна превышать 6.5 мм - в противном случае соединение будет ненадежным, а винт может повредить камеру.

Если Вы носите очки

Края насадки окуляра можно отогнуть назад, чтобы было удобнее смотреть в видоискатель [d].

Меры предосторожности при обращении с жидкокристаллической панелью и видоискателем

- Не держите видеокамеру за видоискатель или жидкокристаллическую панель [e].
- Не размещайте камеру в таком положении, при котором на экран видоискателя или жидкокристаллическую панель могут попадать прямые солнечные лучи. Это может повредить внутренние детали видоискателя или жидкокристаллического экрана. Соблюдайте осторожность, оставляя видеокамеру на солнце или у окна [f].

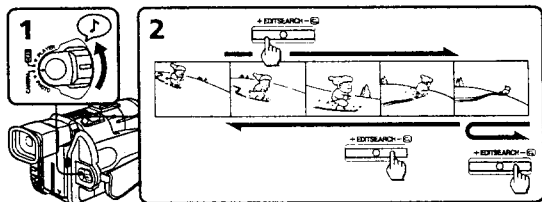
Basic operation / Основное пользование

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Checking the recorded picture

Using the EDITSEARCH, you can review the last recorded scene or check the recorded picture in the viewfinder.

- (1) While pressing the small green button on the POWER switch, set it to CAMERA.
- (2) Press the - side of EDITSEARCH momentarily; the last few seconds of the recorded portion plays back (Rec Review). Hold down the - side of EDITSEARCH until the camcorder goes back to the scene you want. The last recorded portion is played back. To go forward, hold down the + side (Edit Search).



To stop playback
Release EDITSEARCH.

To go back to the last recorded point (END SEARCH)

Press END SEARCH. The last recorded point is played back for about 5 seconds and stops. Note that when you use a tape without cassette memory, this function does not work once you eject the cassette after recording.

To begin re-recording

Press START/STOP. Re-recording begins from the point you released EDITSEARCH. Provided you do not eject the tape, the transition between the last scene you recorded and the next scene you record will be smooth.

Проверка отснятого материала

С помощью функции EDITSEARCH Вы можете просматривать последние только что отснятые кадры и проверять качество изображения, воспроизводя его на экране видоискателя.

- (1) Удерживая в нажатом положении маленькую зеленую кнопку на переключателе POWER, переведите его в позицию CAMERA.
- (2) Нажмите и отпустите сторону - кнопки EDITSEARCH; при этом будут воспроизведены последние несколько секунд отснятого Вами материала (проверка записи). Чтобы найти нужный кадр, не отпускайте сторону - кнопки EDITSEARCH, пока он не будет найден. После этого будет воспроизведена вся запись, следующая за этим кадром. Чтобы промотать ленту вперед, нажмите и удерживайте кнопку со стороны + (монтажный поиск).

Остановка воспроизведения
Отпустите кнопку EDITSEARCH.

Возвращение к концу отснятого материала (END SEARCH)

Нажмите кнопку END SEARCH. Камера воспроизводит последние 5 секунд имеющийся на ленте записи и прекращает воспроизведение. Следует иметь в виду, что при использовании кассетами, не оснащенными электронной памятью, данная функция действует лишь до первого извлечения кассеты с записью из видеокамеры.

Повторная запись

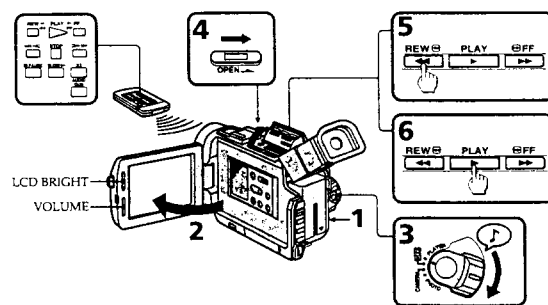
Нажмите START/STOP. Повторная запись начнется с момента, когда Вы отпустили кнопку EDITSEARCH. Если Вы не извлекли кассету из видеокамеры, то переход от последней отснятой сцены к следующей будет плавным.

Playing back a tape

You can monitor the playback picture on the LCD screen or in the viewfinder.

- (1) Insert the recorded tape with the window facing out.
- (2) While pressing PUSH OPEN, open the LCD panel.
- (3) While pressing the small green button on the POWER switch, set it to PLAYER.
- (4) Slide OPEN and pull the video control compartment until it clicks.
- (5) Press << to rewind the tape.
- (6) Press >> to start playback.
- (7) Adjust the volume using VOLUME +/- and the brightness of the LCD screen using LCD BRIGHT +/-.

You can also monitor the picture on a TV screen, after connecting the camcorder to a TV or VCR.



To stop playback, press ■.
To rewind the tape, press <<.
To fast-forward the tape rapidly, press >>.

Using the Remote Commander

You can control playback using the supplied Remote Commander. Before using the Remote Commander, insert the R6 (size AA) batteries.

Воспроизведение видеозаписи

Вы можете просматривать отснятые кадры на жидкокристаллическом экране или в окне видоискателя.

- (1) Установите в камеру записанную кассету окном наружу.
- (2) Нажав PUSH OPEN, раскройте жидкокристаллическую панель.
- (3) Удерживая в нажатом положении маленькую зеленую кнопку на переключателе POWER, переведите его в позицию PLAYER.
- (4) Сдвиньте рычажок OPEN и вытяните до щелчка блок управления видеопросмотром.
- (5) Для перемотки ленты нажимайте <<.
- (6) Для начала воспроизведения нажимайте >>.
- (7) Для регулировки громкости звука пользуйтесь кнопкой VOLUME +/-, а для подстройки яркости жидкокристаллического экрана - кнопкой LCD BRIGHT +/-.

Подключите камеру телевизору или видеомагнитофону. Вы можете также просматривать отснятые видеополосы на телевизионном экране.

Basic operation / Основное пользование

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Playing back a tape

To display the LCD screen/viewfinder screen indicators
Press DISPLAY.
To erase the indicators, press again.

Notes on screen indicators

- The screen indicator disappears when the title is displayed.
- When you play back a tape using a "InfoLITHIUM" battery, indicates the remaining battery capacity. The remaining battery time in minutes is not displayed.

Using headphones

Connect headphones (not supplied) to the jack. You can adjust the volume of the headphones using VOLUME +/-.

To view the playback picture in the viewfinder
Close the LCD panel. The viewfinder turns on automatically.

When using the viewfinder, you can monitor the sound only by using headphones.
To view on the LCD screen again, open the LCD panel. The viewfinder turns off automatically.

Various playback modes

To view a still picture (playback pause)

Press II during playback. To resume playback, press II or ►.

To locate a scene (picture search)

Keep pressing ◀ or ▶ during playback. To resume normal playback, release the button.

To monitor the high-speed picture while advancing the tape or rewinding (skip scan)

Keep pressing ◀ while rewinding or ▶ while advancing the tape. To resume normal rewinding or fast-forward, release the button.

To view the picture at 1/3 speed (slow playback)

Press I on the Remote Commander during playback. For slow playback in reverse direction, press ◀, then press I. To resume normal playback, press ►.

Воспроизведение видеозаписи

Вывод индикаторов на экран жидкокристаллической панели/видоискателя
Нажмите кнопку DISPLAY.
Чтобы убрать индикаторы с экрана, нажмите ту же кнопку повторно.

Об экраных индикаторах

- При выводе на экран титра экранные индикаторы исчезают.
- Если при воспроизведении видеозаписи камера питается от батареи "InfoLITHIUM", то величину оставшегося заряда батареи при этом указывает только индикатор . Оставшееся время работы в минутах на экран не выводится.

Пользование наушниками

Подключите наушники (в комплект не входят) к гнезду . Громкость звука в наушниках регулируется кнопкой VOLUME +/-.

Просмотр отснятого изображения через видоискатель

Закройте жидкокристаллическую панель. При этом автоматически включается видоискатель.
При просмотре через видоискатель звук можно слышать только в наушниках.
Чтобы вернуться к просмотру на жидкокристаллическом экране, откройте панель вновь. Видоискатель автоматически отключается.

Различные режимы воспроизведения

Стоп-кадр (пауза при воспроизведении)
Во время воспроизведения нажмите кнопку II. Чтобы продолжить воспроизведение, нажмите II или ►.

Нахождение нужного фрагмента записи (поиск кадра)
Во время воспроизведения удерживайте в нажатом положении кнопку ◀ или ▶. Для возвращения к нормальному воспроизведению отпустите кнопку.

Ускоренный просмотр изображения во время перемотки вперед или назад (сканирующая перемотка)
Удерживайте в нажатом положении кнопку ◀ при перемотке назад или кнопку ▶ при перемотке вперед. Для возвращения в обычный режим перемотки отпустите кнопку.

Playing back a tape

To view the picture at double speed
For double speed playback in the reverse direction, press ◀, then press x2 on the Remote Commander during playback. For double speed playback in the forward direction, press ►, then press x2 during playback. To resume normal playback, press ►.

To view the picture frame-by-frame

Press ◀ or II on the Remote Commander in playback pause mode. If you keep pressing the button, you can view the picture at 1/25 speed. To resume normal playback, press ►.

To change the playback direction

Press ◀ on the Remote Commander for reverse direction or ► on the Remote Commander for forward direction during playback. To resume normal playback, press ►.

Notes on playback

- The sound is muted in the various playback modes.
- During playback other than normal playback, the previous recording may appear in mosaic image. This is not malfunction.
- When playback pause mode lasts for 5 minutes, the camcorder automatically enters stop mode. To resume playback, press ►.

Note on slow playback

The slow playback can be performed smoothly on this camcorder; however, this function does not work for an output signal from the DV OUT jack.

Воспроизведение видеозаписи

Просмотр видеозаписи с 1/3 нормальной скорости (замедленное воспроизведение)

Во время воспроизведения нажмите кнопку I на пульте дистанционного управления. Для замедленного воспроизведения в обратную сторону нажмите ◀, а затем I. Чтобы возобновить нормальное воспроизведение, нажмите кнопку ►.

Просмотр видеозаписи с удвоенной скоростью

Чтобы воспроизвести запись с удвоенной скоростью в обратную сторону, нажмите в ходе воспроизведения кнопку ◀, а затем кнопку x2 на пульте дистанционного управления. Для воспроизведения с удвоенной скоростью вперед нажмите при воспроизведении кнопку ►, а затем кнопку x2. Чтобы вернуться к нормальному воспроизведению, нажмите ►.

Покладовый просмотр

В режиме паузы при воспроизведении нажмите на пульте дистанционного управления кнопку ◀II или II►. Не отпуская эту кнопку, Вы можете просматривать изображение с 1/25 нормальной скорости. Чтобы вернуться к нормальному воспроизведению, нажмите ►.

Смена направления просмотра

В режиме воспроизведения нажмите на пульте дистанционного управления кнопку ◀ для просмотра в обратную сторону или кнопку ► для просмотра вперед. Чтобы вернуться к нормальному воспроизведению, нажмите ►.

О воспроизведении

- При переходе от нормального к другим режимам воспроизведения звук отключается.
- В других режимах воспроизведения изображение может приобретать "мозаичные" контуры. Это не является признаком неисправности.
- После 5 минут режывания в режиме паузы воспроизведение автоматически прекращается. Чтобы возобновить воспроизведение, нажмите кнопку ►.

О замедленном воспроизведении
Видеокамера способна обеспечивать высококачественное изображение при замедленном воспроизведении; оно, однако, не преобразуется в выходной сигнал, подаваемый на гнездо DV OUT.

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Searching for the end of the picture

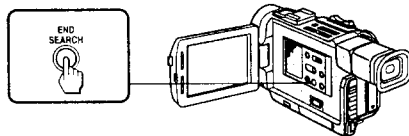
You can go to the end of the recorded portion after you record and play back the tape. The tape starts rewinding or fast-forwarding and the last about 5 seconds of the recorded portion plays back. Then the tape stops at the end of the recorded picture (End Search).

Open the LCD panel and press END SEARCH during recording standby. This function works when the POWER switch is set to CAMERA, PLAYER or PHOTO.

Нахождение конца видеозаписи

После видеосъемки и просмотра отснятого материала видеокамера может автоматически находить конец записанного участка ленты. При этом лента перемотывается вперед или назад, после чего воспроизводится последний фрагмент сделанной на ней записи продолжительностью около пяти секунд. Затем воспроизведение останавливается в конце записанного участка (автопоиск конца записи).

В режиме ожидания начала съемки раскройте жидкокристаллическую панель и нажмите кнопку END SEARCH. Эта функция действует, когда переключатель POWER находится в положении CAMERA, PLAYER или PHOTO.



Note on End Search

When you use a tape without cassette memory, the End Search function does not work once you eject the cassette after recording. If you use a tape with cassette memory, this function will work after you have ejected the tape once.

Об автопоиске конца записи

При использовании кассет, не имеющих электронной памяти, автопоиск конца записи возможен лишь до первого извлечения из камеры записанной видеокассеты. Применительно к кассетам с памятью эта функция действует даже после однократного извлечения и повторной установки кассеты.

Advanced operations Using alternative power sources

You can choose any of the following power sources for your camcorder: battery pack, mains, and 12/24 V car battery. Choose the appropriate power source depending on where you want to use your camcorder.

Place	Power source	Accessory to be used
Indoors	Mains	Supplied AC power adaptor
Outdoors	Battery pack	Battery pack NP-F530 (supplied), NP-F730, NP-F930
In the car	12 V or 24 V car battery	Sony car battery charger DC-V515A

Note on power sources

Disconnecting the power source or removing the battery pack during recording or playback may damage the inserted tape. If this happens, restore the power supply again immediately.

Using the mains

To use the supplied AC power adaptor:

- Connect the mains lead to the mains.
- Lift up the viewfinder.
- Slide the connecting plate down into the guides at the rear of the camcorder until it clicks.

Пользование остальными функциями Выбор источников питания

Ваша видеокамера может питаться от собственной аккумуляторной батареи, от сети или от автомобильного аккумулятора с напряжением 12/24 В. Выбор наиболее подходящего источника питания зависит от того, где Вы собираетесь пользоваться камерой.

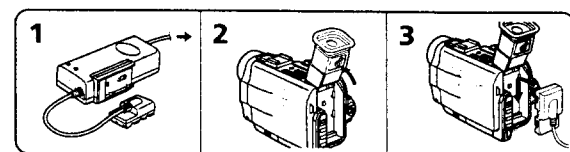
Место	Источник питания	Необходимые принадлежности
В помещении	Сеть	Прилагаемый адаптер сетевого питания
Вне помещения	Батарея	Аккумуляторные батареи NP-F530 (прилагается), NP-F730, NP-F930
В автомобиле	Автомобильный аккумулятор с напряжением 12 В или 24 В	Зарядное устройство для автомобильных аккумуляторов Sony DC-V515A

Об источниках питания

Отключение видеокамеры от источника питания или отсоединение от нее аккумуляторной батареи во время съемки или воспроизведения может привести к повреждению ленты в кассете. В подобном случае следует немедленно восстановить питание камеры.

Питание от сети

Чтобы подключить камеру к прилагаемому адаптеру сетевого питания:
(1) Подсоедините сетевой провод к розетке.
(2) Поднимите видоискатель.
(3) Вставьте контактную пластину в направляющие пазы на задней стороне корпуса видеокамеры и сдвиньте ее вниз до щелчка.



To remove the connecting plate
The connecting plate is removed in the same way as the battery pack.

Отделение контактной пластины.
Отделять контактную пластину от камеры следует так же, как аккумуляторную батарею.

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Using alternative power sources

WARNING

The mains lead must only be changed at a qualified service shop.

PRECAUTION

The set is not disconnected from the AC power source (mains) as long as it is connected to the mains, even if the set itself has been turned off.

Using a car battery

Use a car battery charger such as Sony DC-V515A (not supplied). Connect the car battery lead to the cigarette lighter socket of a car (12 V or 24 V). Connect the car battery charger and the camcorder using the DK-315 (supplied with DC-V515A) connecting cord.



This mark indicates that this product is a genuine accessory for Sony video product. When purchasing Sony video products, Sony recommends that you purchase accessories with this "GENUINE VIDEO ACCESSORIES" mark.

Выбор источников питания

ПРЕДОСТЕРЕЖЕНИЕ

Замену сетевого провода можно производить только в специализированной мастерской.

ВНИМАНИЕ

Питание не отключено до тех пор, пока сетевой провод остается подсоединенным к розетке, даже если сам аппарат при этом выключен.

Питание от автомобильного аккумулятора

Для этого Вам потребуется зарядное устройство для автомобильных аккумуляторов, например модель Sony DC-V515A (в комплект не входит). Подключите провод питания от автомобильного аккумулятора к гнезду прикуривателя в салоне автомобиля (с напряжением бортовой сети 12 В или 24 В). Соедините зарядное устройство для автомобильных аккумуляторов с видеокamerой при помощи прилагаемого соединительного шнура DK-315 (поставляется вместе с DC-V515A).

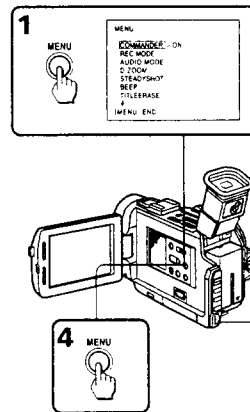


Настоящая эмблема подтверждает, что помеченное ею изделие представляет собой фирменную комплектующую часть к видеопаратуре Sony. Компания Sony рекомендует Вам приобретать к ее видеопаратуре комплектующие, помеченные данной эмблемой ("GENUINE VIDEO ACCESSORIES").

Changing the mode settings

You can change the mode settings in the menu system to further enjoy the features and functions of the camcorder.

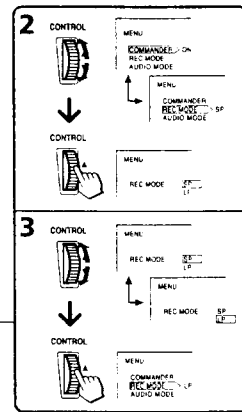
- (1) Press MENU to display the menu on the LCD screen.
- (2) Turn the CONTROL dial to select the desired item, then press the CONTROL dial. Only the selected item is displayed.
- (3) Turn the CONTROL dial to select the desired mode, then press the CONTROL dial. If you want to change the other modes, repeat steps 2 and 3.
- (4) Press MENU to erase the menu display.



Переключение режимов работы

Вы можете использовать все разнообразие функций и возможностей Вашей видеокамеры, переключая режимы ее работы через меню параметров.

- (1) Нажатием кнопки MENU вызовите меню на жидкокристаллический экран.
- (2) Вращая рукоятку CONTROL, выберите нужную позицию и нажмите на рукоятку CONTROL. На экране останется только выбранная Вами позиция.
- (3) Поворотом рукоятки CONTROL выберите необходимый режим и нажмите на рукоятку CONTROL. Для переключения других режимов повторите операции 2 и 3.
- (4) Чтобы убрать меню с экрана, вновь нажмите кнопку MENU.



Changing the mode settings

While recording in mirror mode, you cannot operate the menu system.

Note on changing the mode settings

Menu items differ depending on the setting of the POWER switch to PLAYER or CAMERA/PHOTO.

Selecting the mode setting of each item

Items for both CAMERA/PHOTO and PLAYER modes.

- COMMANDER* <ON/OFF>
 - Select ON when using the supplied Remote Commander for the camcorder.
 - Select OFF when not using the Remote Commander.

BEEP <ON/OFF>

- Select ON so that beeps sound when you start/stop recording, etc.
- Select OFF when you do not want to hear the beeps sound.

TITLE ERASE

- Select the title you have superimposed.

LCD B.L. <BRT NORMAL/BRIGHT>

- Normally select BRT NORMAL.
- Select BRIGHT when the LCD panel is dark.
- When you adjust the LCD B.L., the recorded picture is not affected.

LCD COLOUR

- Select this item and change the level of the colour by turning CONTROL dial up (+) or down (-) to adjust the colour intensity of the picture.

VF BRIGHT

- Select this item on the LCD panel.
- Select this item to adjust the brightness of the viewfinder. The viewfinder becomes brighter when you turn the CONTROL dial up (+), and darker when you turn it down (-).

Переключение режимов работы

При съемке в зеркальном режиме меню параметров не действует.

О переключении режимов работы

Содержание меню меняется в зависимости от того, находится ли переключатель POWER в положении PLAYER или CAMERA/PHOTO.

Возможные режимы для каждой позиции меню

Общие позиции для положений CAMERA/PHOTO и PLAYER

- COMMANDER* <ON/OFF>
 - Режим ON - использование прилагаемого пульта дистанционного управления видеокамерой.
 - Режим OFF - пульт дистанционного управления не используется.

BEEP <ON/OFF>

- Режим ON - начало/прекращение записи и т.п. сопровождается сигналом бипера.
- Режим OFF - бипер отключен.

TITLE ERASE

- Стирание наложенного титра.

LCD B.L. <BRT NORMAL/BRIGHT>

- Обычный режим - BRT NORMAL.
- Режим BRIGHT выбирается при недостаточной яркости жидкокристаллического экрана.
- Регулировка параметра LCD B.L. не влияет на записываемое изображение.

LCD COLOUR

- Выберите эту позицию и изменяя показания индикатора поворотом рукоятки CONTROL вверх(+) или вниз(-). Вы можете регулировать цветовую насыщенность изображения.

VF BRIGHT

- Закрыйте жидкокристаллическую панель. Выберите эту позицию. Вы можете регулировать яркость экрана видеоскопателя. Экран видеоскопателя становится ярче при повороте рукоятки CONTROL вверх(+) и темнее при ее повороте вниз(-).

Changing the mode settings

VF PW-SAVE <ON/OFF>

- Select ON to activate "finder power save" (page 14).
- Select OFF to inactivate "finder power save".

DISPLAY <LCD/V-OUT/LCD>

- Normally select LCD.
- Select V-OUT/LCD to display indicator both on the LCD panel and TV screen.

Items for CAMERA/PHOTO mode only

- REC MODE <SP/LP>
 - Select SP when recording in SP (standard play) mode.
 - Select LP when recording in LP (long play) mode.

D ZOOM <ON/OFF>

- Select ON to activate digital zooming.
- Select OFF not to use the digital zoom. The camcorder goes back to 10x optical zoom.

STEADYSHOT <ON/OFF>

- Normally select ON.
- Select OFF when you do not have to worry about camera-shake.

REC LAMP <ON/OFF>

- Normally select ON.
- Select OFF when you do not want the camera recording/battery lamp at the front of the unit to light up.

CLOCK SET

- Select this item to reset the date or time.

Переключение режимов работы

VF PW-SAVE <ON/OFF>

- Режим ON - "экономия питания видеоскопателя" (стр. 14).
- Режим OFF - видеоскопатель работает постоянно.

DISPLAY <LCD/V-OUT/LCD>

- Обычный режим - LCD.
- Режим V-OUT/LCD - индикатор выводится как на жидкокристаллическую панель, так и на экран телевизора.

Позиции меню только для положения CAMERA/PHOTO

- REC MODE <SP/LP>
 - Режим SP - стандартная скорость записи.
 - Режим LP - медленная скорость записи.

D ZOOM <ON/OFF>

- Режим ON - используется система цифрового увеличения.
- Режим OFF - цифровое увеличение не используется. Съемка ведется только оптическим телеобъективом с двенадцатикратным увеличением.

STEADYSHOT <ON/OFF>

- Обычный режим - ON.
- Режим OFF выбирается в случаях, когда нет необходимости компенсировать колебания видеокамеры при съемке.

REC LAMP <ON/OFF>

- Обычный режим - ON.
- В режиме OFF сигнальная лампочка съемки/состояния батареи на передней стороне корпуса видеокамеры не загорается.

CLOCK SET

- Корректировка даты и времени.

Changing the mode settings

Переключение режимов работы

DEMO MODE <STBY ON/OFF>

- Select STBY ON to glance over the function of camcorder.
- Select OFF not to display demonstration.

Notes on DEMO MODE

- DEMO MODE is set to STBY ON (Standby) at the factory and the demonstration starts about 10 minutes after you set the POWER switch to CAMERA without inserting a cassette.
- Note that you cannot select STBY ON of DEMO MODE in the menu system.
- You cannot select DEMO MODE when a cassette is inserted in the camcorder.
- If you insert a cassette during the demonstration, the demonstration stops. You can start recording as usual. DEMO MODE automatically returns to STBY ON.

To look at the demonstration at once

Eject the cassette, if inserted. Select STBY ON of DEMO MODE and erase the menu display. The demonstration will begin. When you turn off the camcorder once, DEMO MODE automatically returns to STBY ON.

AUDIO MODE <12BIT/16BIT>

- Normally select 12BIT to record two stereo sound.
- Select 16BIT to record the one stereo sound with high quality.

Items for PLAYER mode only

TITLE DSPL <ON/OFF>

- Select ON to display the title you have superimposed.
- Select OFF not to display the title.

TAPE TITLE

Select this item to label the cassette tape.

AUDIO MIX*

Select this item and adjust the balance between the stereo 1 and stereo 2 by turning the CONTROL dial.

DEMO MODE <STBY ON/OFF>

- Режим STBY ON - демонстрация функций видеокмеры.
- Режим OFF - демонстрация отключена.

О демонстрационном режиме (DEMO MODE)

- Переключатель демонстрационного режима установлен изготовителем в положение STBY ON (ожидание включения). При этом демонстрация функций камеры начинается примерно через 10 минут после перевода переключателя POWER в положение CAMERA, если до этого в камеру не установлена кассета.
- Обратите внимание на то, что функция DEMO MODE невозможно перевести в режим STBY ON с помощью меню параметров.
- Функция DEMO MODE не включается, если в видеокмеру установлена кассета.
- При установке кассеты во время демонстрации демонстрация прекращается, и Вы можете начинать съемку как обычно. Функция DEMO MODE автоматически возвращается в режим STBY ON.

Прямое включение демонстрационного режима

Если в видеокмере находится кассета, извлеките ее. Переведите функцию DEMO MODE в режим STBY ON и убедитесь с экрана меню. Демонстрация начнется. При выключении видеокмеры функция DEMO MODE автоматически возвращается в режим STBY ON.

AUDIO MODE <12BIT/16BIT>

- Обычный режим - 12BIT (запись стереозвук из двух источников)
- Режим 16BIT - высококачественная запись стереозвук из одного источника.

Позиции меню только для положения PLAYER

TITLE DSPL <ON/OFF>

- Режим ON - вывод на экран наложенного Вами титра.
- Режим OFF - отмена вывода титра.

TAPE TITLE

Для маркировки видеокассет.

AUDIO MIX*

Выбрав эту позицию, Вы можете с помощью ручки CONTROL регулировать баланс между звуковыми дорожками стерео 1 и стерео 2.

Changing the mode settings

Переключение режимов работы

CM SEARCH <ON/OFF>

- Select ON to search using cassette memory.
- Select OFF to search without using cassette memory.

DATA CODE <DATE/CAM or DATE>

- Select DATE/CAM to display date and recording data during playback.
- Select DATE to display date during playback.

- These settings are retained even when the battery is removed, as long as the vanadium-lithium battery is charged. As far as the items without an asterisk are concerned, their settings return to the default 5 minutes or more after the battery is removed.

When recording a close subject

When REC LAMP is set to ON, the red camera recording lamp on the front of the camcorder may reflect on the subject if it is close. In this case, we recommend you set REC LAMP to OFF.

Note

- When playing back a tape recorded in the 16-bit mode, you cannot adjust the balance in AUDIO MIX.
- If you select 16BIT in AUDIO MODE menu, you cannot add an audio sound.
- If you select BRIGHT in LCD B.L. menu, the battery life while recording becomes 10 to 20% shorter. When you use the power sources except for a battery, the menu item LCD B.L. is set to BRIGHT automatically and the item does not appear in the screen.

CM SEARCH <ON/OFF>

- Режим ON - поиск с использованием памяти кассеты.
- Режим OFF - поиск без помощи памяти кассеты.

DATA CODE <DATE/CAM или DATE>

- Режим DATE/CAM - вывод даты и информации о записи на экран при воспроизведении.
- Режим DATE - вывод даты на экран при воспроизведении.

- Эти установки сохраняются в памяти видеокмеры даже после отделения от нее аккумуляторной батареи, до тех пор, пока не разрядится внутренняя ванадиево-литиевая батарея. Что касается позиций, не помеченных звездочкой, то их установки возвращаются к стандартным спустя 5 или более минут после отделения аккумуляторной батареи.

Съемка объекта, находящегося на малом расстоянии от объектива

Если переключатель сигнальной лампы REC LAMP находится в положении ON, то свет красной сигнальной лампы записи, расположенной на передней стороне корпуса камеры, может попадать на близко расположенный предмет съемки. В таких случаях рекомендуется выбрать в меню для переключателя REC LAMP позицию OFF.

Примечания

- При воспроизведении записи, сделанной в 16-битном режиме, функция регулировки баланса AUDIO MIX не работает.
- Если в меню AUDIO MODE выбрана позиция 16BIT, то наложение звука невозможно.
- Если в позиции LCD B.L. выбран режим BRIGHT, то продолжительность съемки без подзарядки батареи сокращается на 10 - 20%. При использовании другими источниками питания переключатель LCD B.L. автоматически переводится в режим BRIGHT, а соответствующая позиция меню на экран не выводится.

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Fade-in and fade-out

Затемнение и выход из затемнения

You can fade in or out to give your recording a professional appearance.

When fading in, the picture gradually fades in from black while the sound increases. When fading out, the picture gradually fades to black while the sound decreases.

When fading in [a]

- (1) While the camcorder is in Standby mode, press FADER until the desired indicator flashes.
- (2) Press START/STOP to start recording. The fade indicator stops flashing.

When fading out [b]

- (1) During recording, press FADER until the desired indicator flashes.
- (2) Press START/STOP to stop recording. The fade indicator stops flashing, and then recording stops.

Чтобы Ваши видеофильмы смотрелись более профессионально, Вы можете использовать в них такие приемы, как затемнение и выход из затемнения.

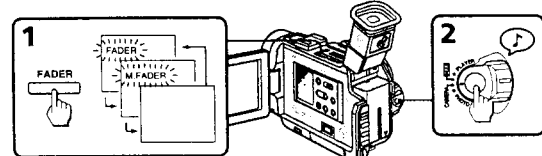
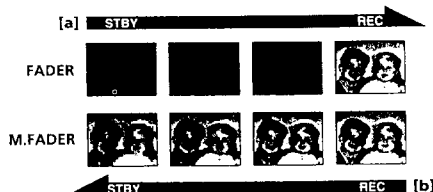
При выходе из затемнения изображение постепенно протупает на темном экране с одновременным возрастанием громкости звука. При затемнении яркость изображения постепенно уменьшается до его полного слияния с темным фоном, что сопровождается приглушением звука.

Выход из затемнения [a]

- (1) В режиме ожидания начала съемки нажимайте кнопку FADER до тех пор, пока не начнет мигать нужный индикатор.
- (2) Начните съемку нажатием кнопки START/STOP. Мигание индикатора затемнения прекращается.

Затемнение [b]

- (1) Во время съемки нажимайте кнопку FADER до тех пор, пока не начнет мигать нужный индикатор.
- (2) Остановите съемку нажатием кнопки START/STOP. Индикатор затемнения перестает мигать, после чего съемка прекращается.



Fade-in and fade-out

Затемнение и выход из затемнения

To cancel the fade-in/fade-out function Before pressing START/STOP, press FADER until the fade indicator disappears.

When the POWER switch is set to PHOTO, or the START/STOP MODE control is set to ANTI GROUND SHOOTING Δ or 5SEC You cannot use the fade-in/fade-out function.

Note on the fader function

You cannot use the following function while using the fader function. Also, while using the following functions you cannot use the fader function.

-Title

Отмена затемнения/выхода из затемнения Перед нажатием на START/STOP нажмите кнопку FADER, чтобы индикатор затемнения исчез с экрана.

Если переключатель POWER находится в положении PHOTO, либо переключатель режима START/STOP MODE установлен в положение ANTI GROUND SHOOTING Δ или 5SEC.

В этих случаях функция затемнения/выхода из затемнения не действует.

О функции затемнения

Нижеперечисленными функциями нельзя пользоваться во время работы функции затемнения. Функцию затемнения, в свою очередь, нельзя использовать во время пользования этими функциями.

- Титры


Advanced operation / Пользование остальными функциями

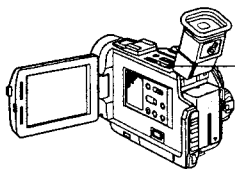
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Shooting with backlighting


When you shoot a subject with the light source behind the subject or a subject with a light background, use the BACK LIGHT function.

Press BACK LIGHT. The  indicator appears on the LCD or in the viewfinder.



- [a] Subject is too dark because of backlight
[b] Subject becomes bright with backlight compensation.

After shooting

Be sure to release this adjustment condition by pressing BACK LIGHT again. The  indicator disappears. Otherwise, the picture will be too bright under normal lighting condition.


This function is also effective under the following conditions:

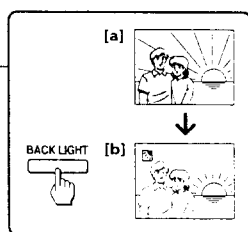
- A subject with a light source nearby or a mirror reflecting light
- A white subject against a white background. Especially when you shoot a person wearing shiny clothes made of silk or synthetic fibre, his or her face tends to become dark if you do not use this function.

Note on the BACK LIGHT function
When you press EXPOSURE, the BACK LIGHT function is cancelled.

Съемка против света


При съемке объекта, позади которого находится источник света, или объекта на светлом фоне, пользуйтесь функцией BACK LIGHT.

Нажмите кнопку BACK LIGHT. При этом на жидкокристаллическом экране или в окне видоискателя появляется индикатор .



- [a] Объект съемки выглядит слишком темным из-за встречного света
[b] Компенсация встречного света заставляет объект выглядеть светлее

По окончании съемки

Не забудьте отключить режим компенсации встречного света повторным нажатием кнопки BACK LIGHT. При этом индикатор  должен исчезнуть. Иначе отснятое при нормальном освещении изображение будет выглядеть "засвеченным".

Данная функция может быть полезной также в следующих случаях:

- При съемке объекта, рядом с которым находится источник света или зеркало, отражающее яркий свет.
- При съемке объектов белого цвета на белом фоне. Кроме того, лицо человека в одежде из блестящей шелковой или синтетической ткани, если снимать его без помощи данной функции, будет выглядеть темным.

О функции BACK LIGHT
При нажатии кнопки EXPOSURE функция BACK LIGHT отключается.

Photo recording

You can record a still picture like a photograph for about seven seconds. This mode is useful when you want to enjoy a picture such as a photograph or when you print a picture using a video printer (not supplied). You can record about 510 pictures on a 60-minute tape in SP mode.

Shutter speed is automatically adjusted up to 1/1000 depending on the exposure.

(1) While pressing the small green button on the POWER switch, set it to PHOTO. Two beeps sound.

(2) Keep pressing START/STOP lightly until a still picture and "PHOTO CAPTURE" appear on the LCD screen or in the viewfinder.

Recording does not start yet. To change the still picture, release START/STOP, select still picture again, and keep pressing START/STOP lightly again.

If you press the PHOTO button on the Remote Commander when a still picture appears on the LCD screen or in the viewfinder, the camcorder will record that still picture. However, you cannot select other still pictures by using this button.

(3) Press START/STOP deeper. "PHOTO REC" flashes and the still picture on the LCD screen or in the viewfinder is recorded for about seven seconds. The sound during those seven seconds is also recorded and the pictures appear like an animation on the LCD screen or in the viewfinder. You cannot change the POWER switch or press START/STOP during recording.

Покадровые видеофотоснимки

Вы можете фиксировать на видеоленте стоп-кадры, продолжающиеся около семи секунд. Это полезно в случаях, когда Вам хочется рассмотреть отдельный кадр как фотографию или распечатать его на видеопринтере (в комплект не входит). В режиме SP на видеоленте продолжительностью 60 минут может поместиться около 510 таких кадров. При этом выдержка от стандартной до 1/1000 устанавливается автоматически в зависимости от освещенности.

(1) Удерживая в нажатом положении маленькую зеленую кнопку на переключателе POWER, переведите его в положение PHOTO. Это сопровождается двойным сигналом бипера.

(2) Нажимайте слегка на кнопку START/STOP, пока на жидкокристаллическом экране или в окне видоискателя не появится стоп-кадр и надпись "PHOTO CAPTURE".

Этот кадр пока не записан. Чтобы выбрать другой кадр, отпустите кнопку START/STOP, найдите новый кадр и вновь слегка нажимайте START/STOP.

Если в момент, когда на жидкокристаллическом экране или в окне видоискателя зафиксирован стоп-кадр, нажать кнопку PHOTO на пульте дистанционного управления, этот стоп-кадр будет записан камерой на ленту. Данной кнопкой, однако, нельзя пользоваться для выбора кадра перед съемкой.

(3) Сильнее нажимайте кнопку START/STOP. При этом начинает мигать указатель "PHOTO REC", а зафиксированный на жидкокристаллическом экране или в окне видоискателя стоп-кадр записывается в течение примерно семи секунд. В эти семь секунд продолжается также запись звука, а кадры на жидкокристаллическом экране или в видеоскопике сменяют друг друга как при киноmontaже. Во время записи нельзя менять положение переключателя POWER или нажимать кнопку START/STOP.

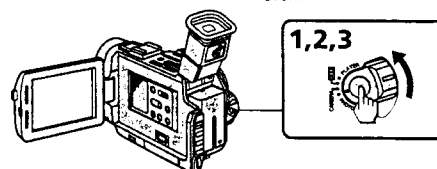


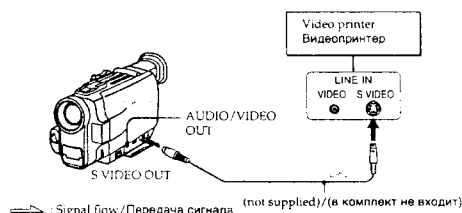
Photo recording

Note on the still picture

When the still picture recorded on this camcorder is played back on another VCR, the picture may be blurred. This is not a malfunction.

Printing the still picture

You can print a still picture by using the video printer (not supplied). Connect the video printer using the S video connecting cable (not supplied). Refer to the instruction manual of the video printer as well.



If the video printer is not equipped with S VIDEO input, use the supplied A/V connecting cable. Connect it to the AUDIO/VIDEO OUT jack and connect the yellow plug of the cable to the VIDEO input of the video printer.

Покадровые видеофотоснимки

О стоп-кадрах

При воспроизведении на другом видеомониторе стоп-кадров, отснятых данной видеокамерой, изображение может утрачивать резкость. Это не свидетельствует о неисправности аппаратуры.

Печать видеофотоснимков

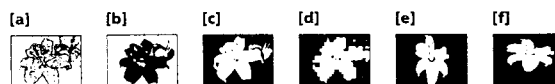
Стоп-кадр можно распечатать на видеопринтере (в комплект не входит). Подключите видеопринтер к камере с помощью прилагаемого соединительного S-видеокабеля (в комплект не входит). Следуйте также указаниям, приведенным в инструкции к видеопринтеру.

Если у видеопринтера отсутствует входное гнездо S VIDEO. Воспользуйтесь прилагаемым аудио/видеокабелем. Один его конец следует подключить к гнезду AUDIO/VIDEO OUT, а желтый штекер другого конца - к входному гнезду видеопринтера, обозначенному словом VIDEO.

Enjoying picture effect

Selecting picture effect

You can make pictures like those of television with the Picture Effect function.



PASTEL [a]
The picture is in pastel tones.

NEG. ART [b]
The colour of the picture is reversed.

SEPIA
The picture is sepia.

B&W
The picture is monochrome (black and white).

SOLARIZE [c]
The light intensity is clearer, and the picture looks like an illustration.

MOSAIC [d]
The picture is mosaic.

SLIM [e]
The picture expands vertically.

STRETCH [f]
The picture expands horizontally.

Применение видеоэффектов

Выбор видеоэффекта

Видеоэффекты помогают сделать Ваши фильмы похожими на профессиональные телевизионные материалы.

PASTEL [a]
Изображение приобретает пастельные тона.

NEG. ART [b]
Изображение становится похожим на негатив.

SEPIA
Изображение приобретает оттенок, напоминающий старые фотографии.

B&W
Изображение становится черно-белым.

SOLARIZE [c]
Свет, тени и цветовые пятна становятся контрастнее, как на рисунке.

MOSAIC [d]
"Мозаичное" изображение.

SLIM [e]
Изображение вытягивается по вертикали.

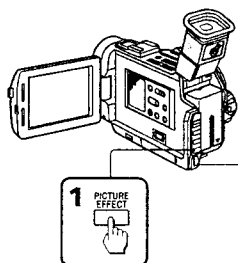
STRETCH [f]
Изображение растягивается по горизонтали.

Enjoying picture effect

Применение видеоэффектов

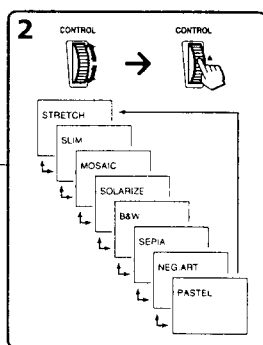
Using picture effect function

- (1) While in Standby mode, press PICTURE EFFECT.
- (2) Turn the CONTROL dial to select the desired Picture Effect mode.



Пользование функцией видеоэффектов

- (1) В режиме ожидания начала съемки нажмите кнопку PICTURE EFFECT.
- (2) Поворотом рукоятки CONTROL выберите нужный видеоэффект.



Returning to normal mode

Press PICTURE EFFECT repeatedly until the Picture Effect indicator disappears.

Note on the picture effect

When you turn the power off, the camcorder returns automatically to normal mode.

Возвращение в обычный режим

Нажимайте на кнопку PICTURE EFFECT до тех пор, пока индикатор видеоэффекта не исчезнет с экрана.

О функции видеоэффектов

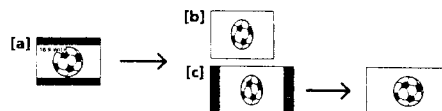
При выключении питания видеокамера автоматически возвращается в обычный режим.

Using the wide mode function

Широкоформатный режим

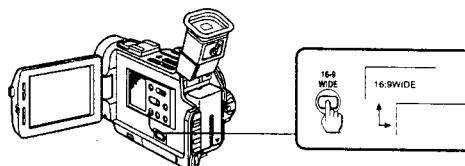
You can record a 16:9 wide picture to watch on the 16:9 wide-screen TV (16:9WIDE). The picture with black bands at the top and the bottom on the LCD screen or in the viewfinder [a] is normal. The picture on a normal TV [b] is horizontally compressed. You can watch the picture of normal images on a wide-screen TV [c].

Вы можете вести съемку в формате 16:9 для последующего просмотра на широкоэкранном телевизоре (16:9WIDE). На жидкокристаллическом экране или в окне видоискателя видно нормальное изображение, ограниченное сверху и снизу черными полосами [a]. На экране обычного телевизора изображение выглядит сжатым по горизонтали [b]. На экране широкоэкранного телевизора воспроизводится нормальное изображение [c].



While in Standby mode, press 16:9 WIDE. 16:9 WIDE appears on the LCD screen.

В режиме ожидания начала съемки нажмите кнопку 16:9 WIDE. На жидкокристаллическом экране появляется указатель 16:9 WIDE.



To cancel wide mode

Press 16:9 WIDE again.

Отмена широкоформатного режима

Нажмите кнопку 16:9 WIDE еще раз.

To watch the tape recorded in wide mode

To watch the tape recorded in 16:9WIDE mode, set it to full mode. For details, refer to the instruction manual of your TV. Note that the picture recorded in 16:9WIDE mode looks compressed on a normal TV.

Просмотр видеозаписи, сделанной в широкоформатном режиме

Для просмотра видеозаписи, сделанной в режиме 16:9WIDE, необходимо перейти в полноформатный режим. Подробнее см. в инструкции по эксплуатации телевизора. Обратите внимание на то, что на экране обычного телевизора изображение, отснятое в режиме 16:9WIDE, выглядит сжатым по горизонтали.

Note on wide mode

You cannot select or cancel the wide mode during recording.

О широкоформатном режиме
Широкоформатный режим невозможно включить или отключить во время записи.

Using the PROGRAM AE function

Функция PROGRAM AE

You can select from six PROGRAM AE (Auto Exposure) modes to suit your shooting situation. When you use PROGRAM AE, you can get a Portrait effect (the subject is in focus and the background is out of focus), capture high-speed action, record night views, etc.

В зависимости от условий съемки Вы можете выбрать один из шести запрограммированных режимов автоматической экспозиции (PROGRAM AE). Пользуясь функцией PROGRAM AE, можно получать эффект портретной съемки (объект в фокусе, задний план расфокусирован), запечатлеть быстро движущиеся предметы, снимать ночные пейзажи и т.д.

Selecting the best mode

Select a proper PROGRAM AE mode referring to the following description.

Выбор оптимального режима

При выборе режима PROGRAM AE руководствуйтесь нижеприведенными пояснениями.



Spotlight mode

Recording a subject spotlighted on a stage or at a wedding ceremony, etc.

Soft portrait mode

To record

- A still subject such as a person or flower
- A softened picture
- A person in clearer flesh tones

Sports lesson mode

Capturing high-speed action in sports such as golf or tennis

Beach & Ski mode

Recording a person in a place such as on the beach or in the ski slopes where there is a lot of reflection

Sunset & Moon mode

Recording sunset, night views, fireworks or neon signs

Landscape mode

Recording a landscape through a window or wire net

Съемка при юпитерах

Используется в случаях, когда предмет съемки выделен искусственной подсветкой (на сцене, в ходе свадебной церемонии и т.д.)

Мягкий портретный режим

Используется для:

- съемки неподвижных предметов (лицо человека, цветок)
- смягчения рисунка кадра
- подчеркивания естественных тонов лица в кадре

Спортивный режим

Для фиксации быстрых движений, например при спортивных играх (гольф, теннис)

Пляжный/горнолыжный режим

Для съемки в ярко освещенных солнцем местах с сильным отражением солнечных лучей (пляжи, горнолыжные склоны)

Вечерний/ночной режим

Для съемки на закате солнца, съемки пейзажей при луне, фейерверков или неоновых вывесок

Ландшафтный режим

Для съемки пейзажей через окна или проволочные сетки.

Using the PROGRAM AE function

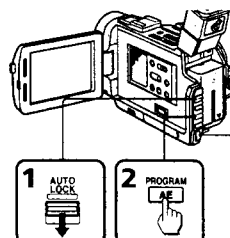
Функция PROGRAM AE

Notes on focus setting

- In the Spotlight, Sports lesson and Beach & Ski modes, you cannot take close-ups because the camcorder is set to focus only on subjects in the middle to far distance.
- In the Sunset & Moon and Landscape modes, the camcorder is set to focus only on distant subjects.

Using the PROGRAM AE function

- (1) While the camcorder is in recording or Standby mode, slide AUTO LOCK down.
- (2) Press PROGRAM AE.
- (3) Turn the CONTROL dial so that the symbol of the desired PROGRAM AE mode matches the indicator on the LCD screen or in the viewfinder.



To return to automatic adjustment mode

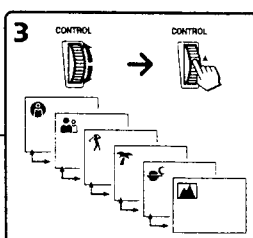
Press PROGRAM AE so that the indicator disappears, or slide AUTO LOCK up.

Note on shutter speed

The shutter speed in each PROGRAM AE mode is as follows:
Sports Portrait mode – from 1/50 to 1/425
Sports lesson mode – from 1/215 to 1/4000
Beach & Ski mode – from 1/50 to 1/215

Пользование функцией PROGRAM AE

- (1) В режиме съемки или ожидания начала съемки сдвиньте вниз рычажок AUTO LOCK.
- (2) Нажмите кнопку PROGRAM AE.
- (3) Поверните рукоятку CONTROL так, чтобы символ нужного режима PROGRAM AE был показан индикатором на жидкокристаллическом экране или в окне видоискателя.



Возвращение в режим автоматической экспозиции

Нажмите кнопку PROGRAM AE, чтобы индикатор исчез с экрана, или передвиньте рычажок AUTO LOCK вверх.

О скорости выдержки

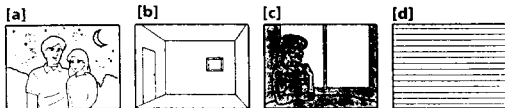
Ниже приводится скорость выдержки, соответствующая каждому из режимов PROGRAM AE:
Мягкий портретный режим – от 1/50 до 1/425
Спортивный режим – от 1/215 до 1/4000
Пляжный/горнолыжный режим – от 1/50 до 1/215

Focusing manually

Ручная наводка на резкость

When to use manual focus

In the following cases you should obtain better results by adjusting the focus manually.



- Insufficient light [a]
- Subjects with little contrast — walls, sky, etc [b]
- Too much brightness behind the subject [c]
- Horizontal stripes [d]
- Subjects through frosted glass
- Subjects beyond nets, etc
- Bright subject or subject reflecting light
- Shooting a stationary subject when using a tripod

Когда следует пользоваться ручной наводкой на резкость

Ручная наводка на резкость позволяет добиться лучших результатов в следующих случаях:

- При недостаточном освещении [a]
- При съемке малоконтрастных предметов (стены, небо и т.д.) [b]
- При съемке против яркого света [c]
- При наличии в кадре горизонтальных полос [d]
- При съемке через матовое стекло
- При съемке через сетку и т.д.
- При съемке предметов, излучающих или отражающих свет
- При съемке неподвижных предметов со штатива

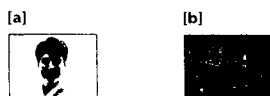
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Adjusting the exposure

Регулировка экспозиции

When to adjust the exposure

Adjust the exposure manually under the following cases.



- The background is too bright (back lighting)
- Insufficient light: most of the picture is dark
- Bright subject and dark background
- To record the darkness faithfully

Когда требуется регулировка экспозиции

Ручную регулировку экспозиции рекомендуется производить в следующих случаях.

- Слишком светлый фон (съемка против света)
- Недостаточная освещенность (большая часть кадра - в темноте)
- ярко освещенный объект на темном фоне
- Необходимость правдиво передать эффект темноты

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Focusing manually

Ручная наводка на резкость

Focusing manually

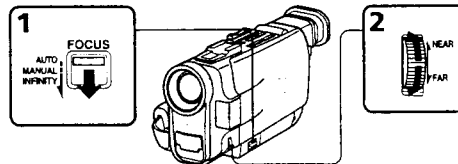
When focusing manually, first focus in telephoto before recording, and then reset the shot length.

- (1) Slide FOCUS down to MANUAL. The indicator appears on the LCD screen or in the viewfinder.
- (2) Turn the focus dial to focus on the subject.

Ручная наводка на резкость

При ручной наводке на резкость следует перед началом съемки сфокусировать камеру на объекте, максимально приблизив его с помощью телеобъектива, а затем восстановить нужный план.

- (1) Передвиньте переключатель FOCUS вниз в положение MANUAL. На жидкокристаллическом экране или в окне видоискателя появится индикатор.
- (2) Вращая рукоятку фокусировки, наведите резкость на объект съемки.



To focus in infinity

Slide FOCUS to INFINITY. ▲▲ indicator appears on the LCD screen or in the viewfinder. This function is useful when the nearest subject is focused automatically, and you want to focus the subject faraway.

To return to the autofocus mode

Slide FOCUS up to AUTO to turn off ▲▲ or indicator.

Shooting in relatively dark places or shooting the subject moving quickly outside

Shoot at wide-angle after focusing in the telephoto position.

If ▲ lights up

Subject is too close.

Настройка фокуса на бесконечность

Передвиньте рычажок FOCUS в положение INFINITY. На жидкокристаллическом экране или в окне видоискателя появляется индикатор ▲▲. Эта функция полезна в случаях, когда близко расположенные предметы наводятся на резкость автоматически, но при этом необходимо четко запечатлеть более отдаленные предметы.

Возвращение в режим автоматической наводки на резкость

Установите переключатель FOCUS в положение AUTO, чтобы с экрана исчез индикатор ▲▲ или ▲▲.

Съемка в условиях сравнительно низкой освещенности и съемка быстро удаляющихся предметов
Снимать следует при широкоугольном положении объектива, предварительно наведя его на резкость при максимальном приближении.

Если загорается индикатор ▲
Объект съемки находится слишком близко.

Advanced operation / Пользование остальными функциями

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Adjusting the exposure

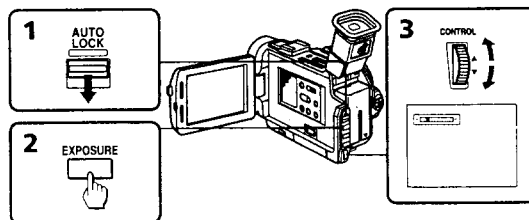
Регулировка экспозиции

Adjusting the exposure

- (1) Slide AUTO LOCK down.
- (2) Press EXPOSURE. The exposure indicator appears on the LCD screen or in the viewfinder.
- (3) Turn the CONTROL dial to adjust the exposure. The exposure is locked at the adjusted brightness.

Регулировка экспозиции

- (1) Передвиньте рычажок AUTO LOCK вниз.
- (2) Нажмите EXPOSURE. На жидкокристаллическом экране или в окне видоискателя появляется индикатор экспозиции.
- (3) Поворотом рукоятки CONTROL установите экспозицию. Величина экспозиции фиксируется на заданном уровне яркости изображения.



To return to automatic exposure mode

Press EXPOSURE to turn off the exposure indicator. Or, slide AUTO LOCK up.

Notes

- The CONTROL dial does not have a stop position.
- If you press PROGRAM AE, the exposure comes back to automatic adjustment again.
- When you adjust the exposure manually, you cannot use the BACK LIGHT function.

Возвращение в режим автоматической экспозиции

Нажмите EXPOSURE, чтобы с экрана исчез индикатор экспозиции, или сдвиньте вверх рычажок AUTO LOCK.

Примечания

- Рукоятка CONTROL не имеет ограничителя вращения.
- При нажатии кнопки PROGRAM AE видеосъемка возвращается в режим автоматической регулировки экспозиции.
- При ручной регулировке экспозиции функция BACK LIGHT не работает.

Advanced operation / Пользование остальными функциями

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Releasing the STEADYSHOT function

When you shoot, the "S" indicator appears in the viewfinder. This indicates that the SteadyShot function is working and the camcorder compensates for camera-shake.

You can release the SteadyShot function when you do not need to use the SteadyShot function. Do not use the SteadyShot function when shooting a stationary object with a tripod.

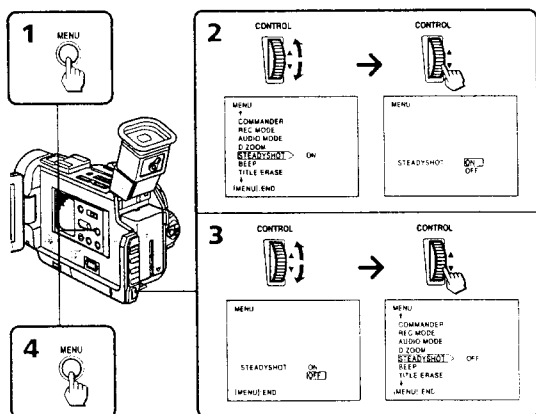
- (1) Press MENU to display the menu on the LCD screen.
- (2) Turn the CONTROL dial to select STEADYSHOT, then press the CONTROL dial.
- (3) Turn the CONTROL dial to select OFF, then press the CONTROL dial.
- (4) Press MENU to erase the menu display.

Отключение электронного стабилизатора кадра (STEADYSHOT)

Во время съемки в окне видоискателя виден индикатор "S". Это означает, что электронный стабилизатор кадра работает, компенсируя колебания видеокамеры.

Если электронный стабилизатор кадра Вам в данный момент не нужен, его можно отключить. Так, им не следует пользоваться при съемке неподвижных объектов с помощью штатива.

- (1) Нажатием кнопки MENU выведете меню на жидкокристаллический экран.
- (2) Поворачивая рукоятку CONTROL, выберите позицию STEADYSHOT и нажмите на рукоятку CONTROL.
- (3) Поворачивая рукоятку CONTROL, выберите позицию OFF и нажмите рукоятку CONTROL.
- (4) Нажатием кнопки MENU уберете меню с экрана.



Releasing the STEADYSHOT function

To activate the SteadyShot function again Select ON in step 3, then press the CONTROL dial.

Notes on the SteadyShot function

- The SteadyShot function will not correct excessive camera-shake.
- When you switch the SteadyShot function on or off, the exposure may fluctuate.
- When the SteadyShot function is released, the "S" indicator does not appear.
- If you use a tele conversion lens (not supplied) or a wide conversion lens (not supplied), the Steady shot function may not work.

Отключение электронного стабилизатора кадра (STEADYSHOT)

Повторное включение электронного стабилизатора кадра В ходе операции 3 выберите ON и нажмите на рукоятку CONTROL.

Об электронном стабилизаторе кадра

- Сильные сотрясения камеры электронным стабилизатором не компенсируются.
- При включении и отключении электронного стабилизатора кадра возможны колебания экспозиции.
- При отключении электронного стабилизатора кадра индикатор "S" исчезает с экрана.
- При использовании телескопической или широкоугольной насадки для объектива (в комплект не входит) электронный стабилизатор кадра может не сработать.

Advanced operations / Пользование остальными функциями

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Watching on a TV screen

Connect the camcorder to your VCR or TV to watch the playback picture on the TV screen. When monitoring the playback picture by connecting the camcorder to your TV, we recommend you to use mains for the power source.

Connecting directly to a VCR/TV with Audio/Video input jacks

Open the jack cover and connect the camcorder to the inputs on the TV by using the supplied A/V connecting cable. Set the TV/VCR selector on the TV to VCR.

Turn down the volume of the camcorder. To get higher quality pictures in DV format, connect the camcorder to your TV using the S video connecting cable (not supplied).

If you are going to connect the camcorder using the S video connecting cable (not supplied) [a], you do not need to connect the yellow (video) plug of the A/V connecting cable [b].

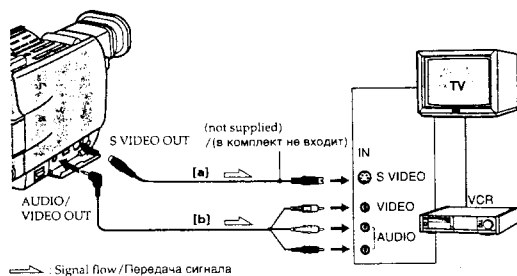
Просмотр видеозаписи на экране телевизора

Для просмотра видеозаписей на экране телевизора камеру необходимо подключить к телевизору или видеомагнитофону. При подключении камеры к телевизору для просмотра рекомендуем пользоваться питанием от сети.

Прямое подключение к видеомагнитофону/телевизору, оснащенному входными видео/аудиогнездами

Откройте крышку, закрывающую разъемы видеокамеры, и соедините их с входными гнездами телевизора при помощи прилагаемого соединительного аудио/видеокабеля. Установите переключатель TV/VCR на телевизоре в положение VCR. Уменьшите до нуля громкость звука видеокамеры.

Для улучшения качества изображения в формате DV воспользуйтесь для подключения видеокамеры к телевизору соединительным S-видеокабелем (в комплект не входит). Если камера подключается к телевизору при помощи соединительного S-видеокабеля (в комплект не входит) [a], то подключать желтый (видео) штекер аудио/видеокабеля [b] не обязательно.



Watching on a TV screen

If your VCR or TV is a monaural type Connect only the white plug for audio on both the camcorder and the VCR or the TV. If you connect the white plug, the sound is L (left) signal. If you connect the red plug, the sound is R (right) signal.

If your TV/VCR has a 21-pin connector (EUROCONNECTOR) Use the supplied 21-pin adaptor.

Просмотр видеозаписи на экране телевизора

Если Вы пользуетесь монофоническим видеомагнитофоном или телевизором Для передачи аудиосигнала подключайте к камере и к видеомагнитофону (телевизору) только белые штекеры соединительного шнура. При подключении белого штекера воспроизводится звук левого канала (L). При подключении красного штекера воспроизводится звук правого канала (R).

Если Ваш телевизор/видеомагнитофон оснащен 21-штырьковым разъемом (EUROCONNECTOR) Пользуйтесь прилагаемым 21-штырьковым переходником.



Using the AV cordless IR receiver — LASER LINK

Once you connect the AV cordless IR receiver (not supplied) having the LASER LINK mark to your TV or VCR, you can easily view the picture on your TV. For details, refer to the instruction manual of the AV cordless IR receiver. LASER LINK is a system which transmits and receives a picture and sound between video equipment having the LASER LINK mark by using infrared rays. LASER LINK is a trademark of Sony Corporation.

To play back on a TV

- (1) Set the POWER switch on the camcorder to PLAYER.
- (2) After connecting your TV and AV cordless IR receiver, set the POWER switch on the AV cordless IR receiver to ON.
- (3) Turn the TV on and set the TV/VCR selector on the TV/VCR selector on the TV to VCR.
- (4) Press LASER LINK. The lamp of LASER LINK button is flashing.
- (5) Press on the camcorder to start playback.
- (6) Adjust the angle and direction of both the camcorder and AV cordless IR receiver.

To cancel the LASER LINK function Press LASER LINK.

Подключение беспроводного инфракрасного аудио/видеоприемника — LASER LINK

Подключите к телевизору или видеомагнитофону беспроводный инфракрасный аудио/видеоприемник, имеющий обозначение LASER LINK (в комплект не входит). Вы сможете легко просматривать видеозаписи на экране телевизора. Подробнее об этом см. в инструкции к инфракрасному приемнику. Система LASER LINK использует инфракрасное излучение для передачи и приема звуковых и видеосигналов между аппаратурой, имеющей обозначение LASER LINK. Название LASER LINK является торговой маркой компании Sony Corporation.

Воспроизведение на экране телевизора

- (1) Поставьте переключатель POWER на видеокамере в положение PLAYER.
- (2) Соединив между собой телевизор и инфракрасный приемник, установите выключатель POWER на инфракрасном приемнике в положение ON.
- (3) Включите телевизор и установите переключатель TV/VCR на телевизоре в положение VCR.
- (4) Нажмите кнопку LASER LINK. При этом на ней начинает мигать лампочка.
- (5) Начните воспроизведение нажатием кнопки на видеокамере.
- (6) Расположите видеокамеру и инфракрасный приемник под оптимальным углом друг к другу.

Выключение функции LASER LINK Нажмите LASER LINK.

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Searching the boundaries of recorded tape with date

Нахождение границ участка записи, помеченного определенной датой

You can search for the boundaries of recorded tape with date: Date Search function. To search the beginning of the specific date and play back from the point, there are two ways:

- Using cassette memory, you can select the date displayed on the LCD screen or in the viewfinder.
- Without using cassette memory.

You can only operate with the Remote Commander.

Searching for the date by using cassette memory

You can use this function only when playing back a tape with cassette memory.

- Set the POWER switch to PLAYER.
- Press MENU to display the menu on the LCD screen.
- Turn the CONTROL dial to select the CM SEARCH, then press the CONTROL dial.
- Turn the CONTROL dial to select ON, then press the CONTROL dial.
- Press SEARCH MODE on the Remote Commander repeatedly, until the date search indicator appears.
- Press \lll or \ggg to select the date for playback.

Playback starts from the beginning of the selected date automatically.

Вы можете находить границы участка записи, помеченного определенной датой (функция поиска по дате). Найти начало записи от определенной даты и просмотреть запись с этого места можно двумя способами:

- Если кассета оснащена электронной памятью. Вы можете выбрать нужную дату из тех, которые указаны на жидкокристаллическом экране или в окне видоискателя.
- Если кассета не имеет электронной памяти.

Для этого необходим пульт дистанционного управления.

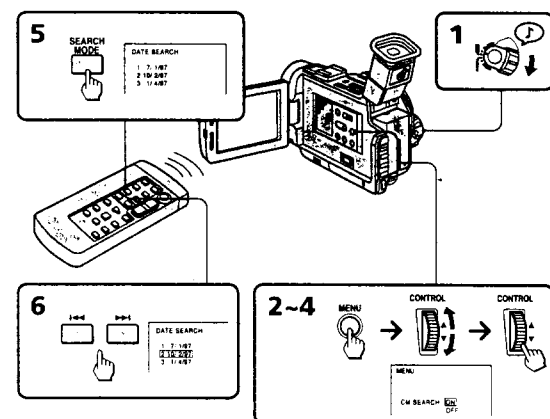
Поиск записи от определенной даты на кассете с памятью

Эта функция действует лишь при воспроизведении кассет, оснащенных электронной памятью.

- Установите переключатель POWER в положение PLAYER.
- Нажатием кнопки MENU выведите меню на жидкокристаллический экран.
- Поворачивая рукоятку CONTROL, выберите CM SEARCH и нажмите на рукоятку CONTROL.
- Поворачивая рукоятку CONTROL, выберите ON и нажмите на рукоятку CONTROL.
- Нажмите кнопку SEARCH MODE на пульте дистанционного управления до тех пор, пока не появится индикатор поиска по дате.
- Нажимая \lll или \ggg , выберите дату, с которой следует начать воспроизведение. Воспроизведение автоматически начнется с первых кадров записи, помеченной соответствующей датой.

Searching the boundaries of recorded tape with date

Нахождение границ участка записи, помеченного определенной датой



To stop searching
Press \blacksquare .

Notes

- The interval of the boundaries between the dates needs more than two minutes. The camcorder may not search if the beginning of the recorded date is too close to the next one.
- The short cursor on the screen suggests the date selected in the previous time.

Прекращение поиска
Нажмите \blacksquare .

Примечания

- Продолжительность участка записи от начала одной даты до начала следующей должна составлять более двух минут. Если эти точки недостаточно удалены друг от друга, автоматический поиск не срабатывает.
- Коротким курсором на экране указывается дата, выбранная при предыдущем поиске.

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Searching the boundaries of recorded tape with date

Нахождение границ участка записи, помеченного определенной датой

Searching for the date without using cassette memory

You can use this function whether the tape has cassette memory or not.

- Set the POWER switch to PLAYER.
- Press MENU to display the menu on the LCD screen.
- Turn the CONTROL dial to select the CM SEARCH, then press the CONTROL dial.
- Turn the CONTROL dial to select OFF, then press the CONTROL dial.
- Press SEARCH MODE on the Remote Commander repeatedly, until the date search indicator appears.
- When the current position is [b], press \lll to search towards [a] or press \ggg to search towards [c]. Each time you press \lll or \ggg , the camcorder searches for the previous or next date.

Playback starts automatically when date changed.

Поиск записи от определенной даты без помощи электронной памяти кассеты

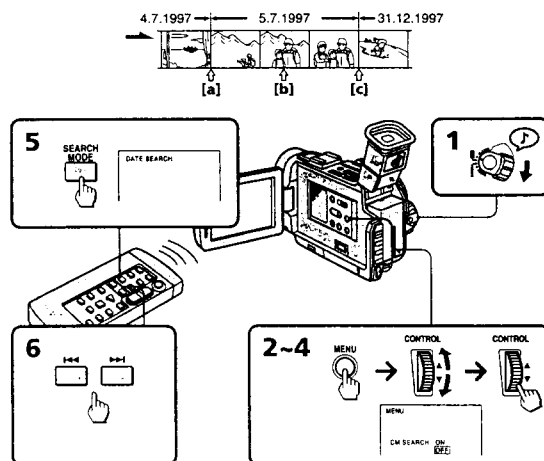
Этой функцией можно пользоваться независимо от того, оснащена ли кассета электронной памятью.

- Установите переключатель POWER в положение PLAYER.
- Нажатием кнопки MENU выведите меню на жидкокристаллический экран.
- Поворачивая рукоятку CONTROL, выберите CM SEARCH и нажмите на рукоятку CONTROL.
- Поворачивая рукоятку CONTROL, выберите OFF и нажмите на рукоятку CONTROL.
- Нажмите на пульте дистанционного управления кнопку SEARCH MODE до тех пор, пока не появится индикатор поиска по дате.
- Находясь в точке [b], нажимайте \lll для поиска в направлении [a] или \ggg для поиска в направлении [c]. При каждом нажатии \lll или \ggg видеокамера переходит к предыдущей или следующей дате.

В точке смены даты автоматически начинается воспроизведение.

Searching the boundaries of recorded tape with date

Нахождение границ участка записи, помеченного определенной датой



To stop searching
Press \blacksquare .

Прекращение поиска
Нажмите \blacksquare .

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Searching the boundaries of recorded tape with title

You can search for the boundaries of recorded tape with title-Title Search function. If you use a tape with cassette memory, you can select the title displayed on the LCD screen or in the viewfinder.

You can only operate with the Remote Commander.

Searching for the title by using cassette memory

You can use this function only when playing back a tape with cassette memory.

- (1) Set the POWER switch to PLAYER.
- (2) Press MENU to display the menu on the LCD screen.
- (3) Turn the CONTROL dial to select the CM SEARCH, then press the CONTROL dial.
- (4) Turn the CONTROL dial to select ON, then press the CONTROL dial.
- (5) Press SEARCH MODE on the Remote Commander repeatedly, until the title search indicator appears.
- (6) Press ◀ or ▶ to select the title for playback.

Playback starts from the scene of the selected title automatically.

Нахождение границ участка записи, помеченного определенным титром

Вы можете находить границы участка записи, помеченного определенным титром (функция поиска по титру). Если кассета оснащена электронной памятью, Вы можете выбрать нужный титр из тех, которые указаны на жидкокристаллическом экране или в окне видоискателя.

Для этого необходим пульт дистанционного управления.

Поиск записи с определенным титром на кассете с памятью

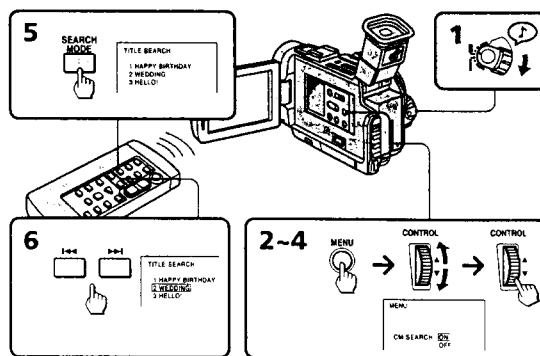
Эта функция действует лишь при воспроизведении кассет, оснащенных электронной памятью.

- (1) Установите переключатель POWER в положение PLAYER.
- (2) Нажатием кнопки MENU выведите меню на жидкокристаллический экран.
- (3) Поворачивая рукоятку CONTROL, выберите CM SEARCH и нажмите на рукоятку CONTROL.
- (4) Поворачивая рукоятку CONTROL, выберите ON и нажмите на рукоятку CONTROL.
- (5) Нажимайте кнопку SEARCH MODE на пульте дистанционного управления до тех пор, пока не появится индикатор поиска по титру.
- (6) Нажимая ◀ или ▶, выберите титр, с которого следует начать воспроизведение.

Воспроизведение автоматически начинается с участка записи, помеченного выбранным титром.

Searching the boundaries of recorded tape with title

Нахождение границ участка записи, помеченного определенным титром



To stop searching
Press ■

Notes

- You cannot superimpose or search a title, if you use a cassette tape without cassette memory.
- The camcorder may not search, if there is a blank portion between the recorded portions in the tape.

Прекращение поиска
Нажмите ■

Примечания

- Наложение титров и поиск по титрам возможны только на видеокассетах с памятью.
- Поиск может не сработать, если между фрагментами записи на ленте имеется незаписанный участок.

Advanced operations / Пользование остальными функциями

Searching for a photo-photo search/photo scan

You can search for the recorded still picture - Photo Search function. There are two modes in Photo Search:

- Using cassette memory, you can select the recorded date which is displayed on the LCD screen or in the viewfinder.
- Without using cassette memory.

You can also search for still pictures one after another and display each picture for five seconds automatically - Photo Scan function. Even if your tape has no cassette memory, you can use the Photo Scan function.

You can only operate with the Remote Commander.

Searching for a photo by using cassette memory

You can use this function only when playing back a tape with cassette memory.

- (1) Set the POWER switch to PLAYER.
- (2) Press MENU to display the menu.
- (3) Turn the CONTROL dial to select the CM SEARCH, then press the CONTROL dial.
- (4) Turn the CONTROL dial to select ON, then press the CONTROL dial.
- (5) Press SEARCH MODE on the Remote Commander repeatedly, until the photo search indicator appears.
- (6) Press ◀ or ▶ to select the date for playback.

Playback starts from the photo of the selected date automatically.

Нахождение видеофотоснимков-фотопоиск/фотосканирование

Вы можете находить на кассете отдельные записанные на ней видеофотоснимки (фотопоиск). Фотопоиск осуществляется в двух режимах:

- С использованием электронной памяти кассеты. При этом Вы можете выбрать нужную дату из тех, которые указаны на жидкокристаллическом экране или в окне видоискателя.
- Без помощи электронной памяти кассеты.

Вы можете также вести автоматический поиск видеофотоснимков с просмотром каждого из них в течение пяти секунд (фотосканирование). Функцией фотосканирования можно пользоваться, даже если кассета не имеет электронной памяти. Для этого необходим пульт дистанционного управления.

Нахождение видеофотоснимков на кассете с памятью

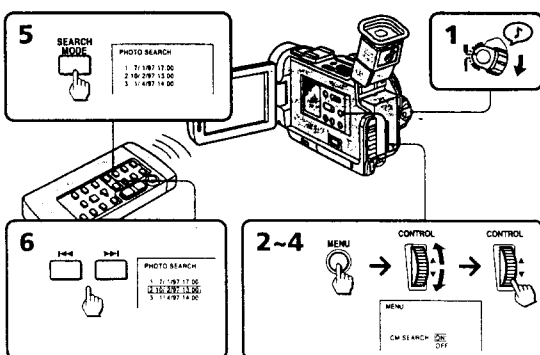
Эта функция действует лишь при воспроизведении кассет, оснащенных электронной памятью.

- (1) Установите переключатель POWER в положение PLAYER.
- (2) Нажатием кнопки MENU выведите меню на экран.
- (3) Поворачивая рукоятку CONTROL, выберите CM SEARCH и нажмите на рукоятку CONTROL.
- (4) Поворачивая рукоятку CONTROL, выберите ON и нажмите на рукоятку CONTROL.
- (5) Нажимайте кнопку SEARCH MODE на пульте дистанционного управления до тех пор, пока не появится индикатор фотопоиска.
- (6) Нажимая ◀ или ▶, выберите дату, с которой следует начать воспроизведение.

Воспроизведение автоматически начинается с фотоснимка, помеченного выбранной датой.

Searching for a photo-photo search/photo scan

Нахождение видеофотоснимков-фотопоиск/фотосканирование



To stop searching
Press ■

Note

When you play back a tape which has a blank portion between recorded portions, the Photo Search function will not work correctly.

Прекращение поиска
Нажмите ■

Примечание

При воспроизведении видеоленты, на которой между фрагментами записи имеется незаписанный участок, функционирование фотопоиска нарушается.

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Searching for a photo--photo search/photo scan

Нахождение видеофотоснимков--фотопоиск/фотосканирование

Searching for a photo without using cassette memory

You can use this function whether the tape has memory or not.

1. Set the POWER switch to PLAYER.
2. Press MENU to display the menu on the LCD screen.
3. Turn the CONTROL dial to select the CM SEARCH, then press the CONTROL dial.
4. Turn the CONTROL dial to select OFF, then the photo scan indicator appears.
5. Press SEARCH MODE on the Remote Commander repeatedly, until the photo scan indicator appears.
6. Press << or >> to select the photo for playback. Each time you press << or >>, the camcorder searches for the previous or next scene.

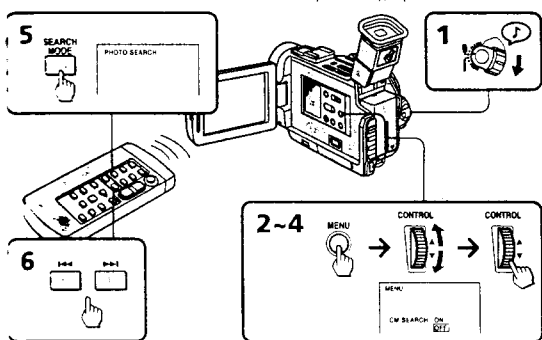
Playback starts from the photo automatically.

Поиск видеофотоснимков без помощи электронной памяти

Этой функцией можно пользоваться независимо от того, оснащена ли кассета электронной памятью.

- (1) Установите переключатель POWER в положение PLAYER.
- (2) Нажатием кнопки MENU выведите меню на жидкокристаллический экран.
- (3) Поворачивая ручку CONTROL, выберите CM SEARCH и нажмите на ручку CONTROL.
- (4) Поворачивая ручку CONTROL, выберите OFF и нажмите на ручку CONTROL.
- (5) Нажимайте кнопку SEARCH MODE на пульте дистанционного управления до тех пор, пока не появится индикатор фотописка.
- (6) Нажимая << или >>, выберите видеофотоснимок, с которого следует начать воспроизведение. При каждом нажатии << или >> видеокамера переходит к предыдущей или следующей сцене.

Воспроизведение автоматически начинается с выбранного видеофотоснимка.



1: stop searching



Прекращение поиска

Нажмите ■

Searching for a photo--photo search/photo scan

Нахождение видеофотоснимков--фотопоиск/фотосканирование

Scanning photo

You can use this function whether the tape has cassette memory or not.

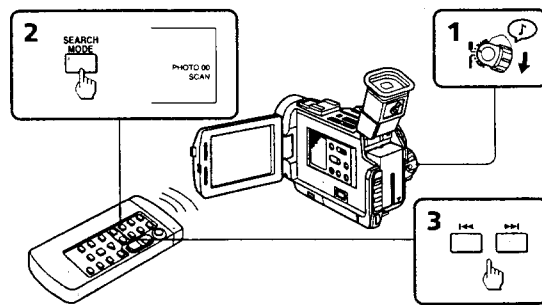
- (1) Set the POWER switch to PLAYER.
- (2) Press SEARCH MODE on the Remote Commander repeatedly until the photo scan indicator displayed in the LCD screen.
- (3) Press << or >>.

Each photos are displayed for about 5 seconds automatically.

Сканирование видеофотоснимков

Этой функцией можно пользоваться независимо от того, оснащена ли кассета электронной памятью.

- (1) Установите переключатель POWER в положение PLAYER.
- (2) Нажимайте кнопку SEARCH MODE на пульте дистанционного управления до тех пор, пока на жидкокристаллическом экране не появится индикатор фотописка.
- (3) Нажимайте << или >>. Каждый видеофотоснимок автоматически воспроизводится в течение примерно 5 секунд.



To stop searching Press ■

Прекращение поиска

Нажмите ■

Returning to a pre-registered position

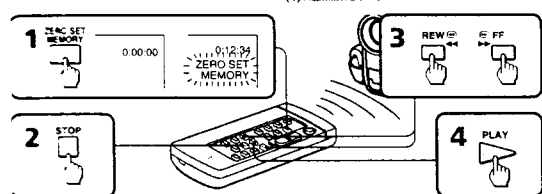
Возвращение в заранее указанную точку записи

Using the Remote Commander, you can easily go back to the desired point on a tape after playback.

1. During playback, press ZERO SET MEMORY at the point you later want to locate. The counter shows "0:00:00" and "ZERO SET MEMORY" appears on the LCD screen or in the viewfinder.
2. Press ■ when you want to stop playback.
3. Press << to rewind or press >> to fast-forward the tape to the counter's zero point. The tape stops automatically when the counter reaches approximately zero. "ZERO SET MEMORY" disappears and the time code appears.

Пользуясь пультом дистанционного управления, Вы без труда можете после просмотра записи вернуться назад в нужную Вам точку видеоленты.

- (1) Во время воспроизведения нажмите кнопку ZERO SET MEMORY в той точке, которую Вам понадобится найти позднее. Счетчик при этом показывает "0:00:00", а на жидкокристаллическом экране или в окне видоискателя появляется надпись "ZERO SET MEMORY".
- (2) Когда Вам будет необходимо остановить воспроизведение, нажмите ■.
- (3) Отмотайте ленту назад с помощью кнопки << или перематывайте ее вперед с помощью кнопки >> до точки, которой соответствуют нулевые показания счетчика. Около этой точки лента автоматически останавливается. При этом с экрана исчезает надпись "ZERO SET MEMORY", а вместо нее появляется хронометрический код.
- (4) Нажмите >>.



Due to the tape counter, there may be a discrepancy of several seconds from the time code.

1. Press ZERO SET MEMORY, the counter's zero point is memorized. Press ZERO SET MEMORY again before step 3 to cancel the memory.
2. The zero set memory may not function when there is a blank portion between pictures on a tape.
3. The zero set memory functions in recording mode.

О счетчике ленты Показания счетчика могут на несколько секунд отличаться от хронометрического кода.

О функции ZERO SET MEMORY (запоминание точки отсчета)

- При нажатии кнопки ZERO SET MEMORY местоположение точки, соответствующей нулевым показаниям счетчика, заносится в память. Для стирания его из памяти нажмите кнопку ZERO SET MEMORY еще раз до начала операции 3.
- Функция запоминания точки отсчета может не сработать, если между фрагментами записи на ленте имеется незаписанный участок.
- Функция запоминания точки отсчета действует в режиме ожидания начала съемки.

Displaying recording data - data code function

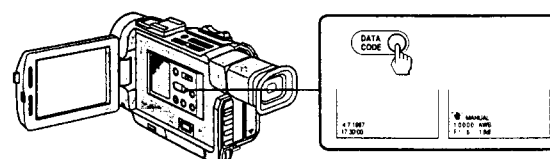
Вывод данных о записи на экран: функция экранного кода

You can display recording data (date/time or various settings when recorded) on the LCD screen or in the viewfinder during playback (Data Code). The Data Code is also displayed on the TV.

Press DATA CODE during playback.

Данные о записи (дата/время и различные параметры) могут при воспроизведении выводиться на жидкокристаллический экран или экран видоискателя (экранный код). Экранный код может также быть выведен на экран телевизора.

Во время воспроизведения нажмите DATA CODE.



To select the items to be displayed Set DATA CODE in the menu system, and select the following items:

- When DATE/CAM is selected: date → various settings (steady shot, AE mode, shutter speed, white balance, aperture value, gain) → no indicator.
- When DATE is selected: date → no indicator.

When bars (---) appear

- A blank portion of the tape is being played back.
- The tape was recorded by a camcorder without having date and time set.
- The tape is unreadable due to tape damage or noise.

Выбор данных для вывода на экран Переключившись в меню параметров на позицию DATA CODE, Вы можете выбрать следующие варианты: При выборе DATE/CAM: дата → различные параметры (стабилизатор кадра, режим автоматической экспозиции, выдержка, баланс по белому, диафрагма, яркость) → индикация отсутствует. При выборе DATE: дата → индикация отсутствует.

Появление полосок (---) означает, что: • Воспроизводится незаписанный участок ленты. • Лента записана на видеокамере, не фиксирующей дату и время записи. • Воспроизведение невозможно по причине повреждения видеоленты или из-за помех.

Editing onto another tape

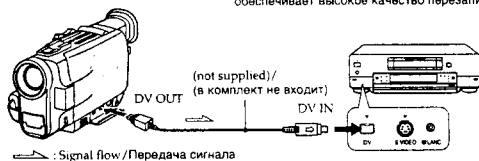
You can create your own video programme by editing with any other DV, mini DV, 8 mm, Hi8 Hi8, Hi8 VHS, S-VHS S-VHS, Hi8 VHS, S-VHS S-VHS or Hi8 Betamax VCR that has audio/video inputs. You can edit with little deterioration of picture and sound quality when using the DV connecting cable.

Before editing

Connect the camcorder to the VCR using the VMC-2DV DV connecting cable (not supplied) or the supplied A/V connecting cable. Use this camcorder as a player.

Using the DV connecting cable

Simply connect the VMC-2DV DV connecting cable (not supplied) to DV OUT and to DV IN of the DV products. With digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing.



Notes on editing when using the DV connecting cable

- You can connect one VCR only.
- You can record picture, sound and system data at the same time on the DV products by using the DV connecting cable only.
- You cannot edit the titles, display indicator, or the contents of cassette memory.
- If you record playback pause picture via the DV jack, the recorded picture becomes rough. And when you playback the picture using the other video equipments, the picture may jitter.
- When you record a playback pause picture via the DV jack, you cannot add audio to that portion of the tape.

Перезапись на другую видеокассету

Вы можете создавать собственные видеопрограммы путем перезаписи на любой видеомассетке формата DV, mini DV, 8 mm, Hi8 Hi8, Hi8 VHS, S-VHS S-VHS, Hi8 VHS, S-VHS S-VHS или Hi8 Betamax, имеющий гнезда аудио/видеокабеля. Использование соединительного DV-кабеля позволяет делать это с минимальной потерей качества звука и изображения.

Перед началом перезаписи

Соедините камеру с видеомассеткой при помощи соединительного DV-кабеля VMC-2DV (в комплект не входит) или прилагаемого соединительного аудио/видеокабеля. Для воспроизведения следует использовать видеомассетку.

Использование соединительного DV-кабеля

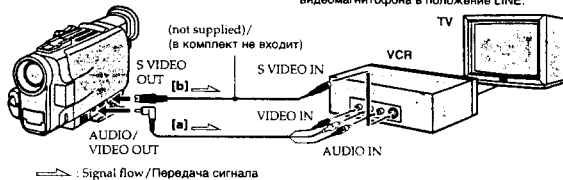
Соединительный DV-кабель VMC-2DV (в комплект не входит) достаточно подключить к гнездам DV OUT и DV IN аппаратуры формата DV. Благодаря этому соединению передача звукового и видеосигнала осуществляется в цифровой форме, что обеспечивает высокое качество перезаписи.

О перезаписи с использованием соединительного DV-кабеля

- Таким образом Вы можете подключить только один видеомассетку.
- На аппаратуре DV Вы можете одновременно записывать изображение, звук и технические данные (только с помощью DV-кабеля).
- Титры, экранные индикаторы и содержание электронной памяти кассеты при перезаписи не копируются.
- При перезаписи изображения в режиме паузы (stop-кадр) с подключением через гнездо DV изображение теряет четкость. При его воспроизведении на другой видеоаппаратуре может появиться дрожание.
- Если на видеомассетку, подключенный через гнездо DV, перезаписывается изображение в режиме паузы, то на этот участок ленты впоследствии будет невозможно наложить звук.

Editing onto another tape

Using the A/V connecting cable [a] or S video connecting cable (not supplied) [b]
Set the input selector on the VCR to LINE.



Notes on editing when using the A/V connecting cable

- Press DATA CODE, SEARCH MODE, or DISPLAY to turn off the display indicators. Otherwise, the indicators will be recorded on the tape.
- If your TV or VCR is a monaural type, connect the yellow plug of the A/V connecting cable for video to the TV or VCR. Connect only the white or red plug for audio to the TV or VCR. If you connect the white plug, the sound is L (left) signal. If you connect the red plug, the sound is R (right) signal.
- You can edit precisely by connecting a LANC cable to this camcorder and other video equipment having fine synchro-editing function, using this camcorder as a player.

Starting editing

- Insert a blank tape (or a tape you want to record over) into the VCR, and insert your recorded tape into the camcorder.
- Play back the recorded tape on the camcorder until you locate the point where you want to start editing, then press II to set the camcorder in playback pause mode.
- On the VCR, locate the recording start point and set the VCR in recording pause mode.
- Press II on the camcorder and VCR simultaneously to start editing.

To edit more scenes

Repeat steps 2 to 4.

To stop editing

Press II on both the camcorder and the VCR.

Перезапись на другую видеокассету

Использование соединительного аудио/видеокабеля [a] или соединительного S-видеокабеля [b]
Установите селектор входного сигнала видеомассетки в положение LINE.

О перезаписи с помощью соединительного аудио/видеокабеля

- Нажатием кнопки DATA CODE, SEARCH MODE или DISPLAY уберете с экрана индикаторы. В противном случае они запишутся на другую видеоленту.
- Если Вы используете монофонический телевизор или видеомассетку, подключайте к нему желтый штекер соединительного аудио/видеокабеля для передачи видеосигнала. Для передачи звукового сигнала используйте красный или белый штекер. При подключении белого штекера записывается звук канала L (левого). При подключении красного штекера записывается звук канала R (правого).
- Точность при видеомонтаже можно обеспечить, соединив видеомассетку с другой видеоаппаратурой, оснащенной функцией точной синхронизации монтажа, при помощи кабеля LANC. Видеомассетка при этом должна использоваться для воспроизведения.

Начало перезаписи

- Вставьте в видеомассетку чистую кассету (или кассету, на которой Вы хотите сделать новую запись), а в видеомассетку - кассету с оригиналом записи.
- Воспроизведите запись на видеомассетке, дойдите до места, с которого требуется начать копирование, и нажмите кнопку II, чтобы перевести камеру в режим паузы при воспроизведении.
- Найдите на видеомассетке место, с которого должна начинаться новая запись, и переведите его в режим паузы при записи.
- Начните перезапись одновременным нажатием кнопки II на видеомассетке и видеомассетке.

Копирование других эпизодов

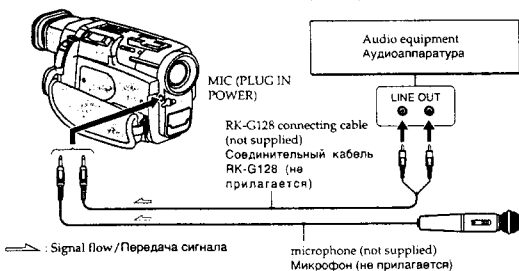
Повторите операции 2 - 4.

Прекращение перезаписи

Нажмите кнопку II на видеомассетке и видеомассетке.

Audio dubbing

You can record an audio sound to add to the original sound on a tape by connecting audio equipment or a microphone. If you connect the audio equipment, you can add a sound on your recorded tape by specifying starting and ending points. The original sound will not be erased.



Notes on audio dubbing

- A new sound cannot be recorded on a tape already recorded in the 16-bit mode (32 kHz, 44.1 kHz or 48 kHz).
- When an external microphone is not connected, the recording will be made through the built-in microphone of the camcorder.
- A new sound cannot be recorded on a tape already recorded in the LP mode.
- If you add a new sound on a tape recorded with another camcorder (including DCR-TRV7E), the sound quality may become worse.
- If you connect the TV to the camcorder when you are recording audio, it may cause noise on the TV sound. But the noise is not recorded on the tape.

Наложение звука

Подключив к видеомассетке аудиоаппаратуру или микрофон, Вы можете накладывать на звуковую дорожку видеозаписи дополнительное звуковое сопровождение. Подключив аудиоаппаратуру, можно четко определять начало и конец наложения звука на видеозапись. Их собственная звуковая дорожка при этом не стирается.

О наложении звука

- Запись на видеоленте дополнительного звукового сигнала невозможна, если видеозапись на ней сделана в 16-битном режиме (32 кГц, 44,1 кГц или 48 кГц).
- Если не подключен внешний микрофон, звук записывается встроенным микрофоном видеомассетки.
- Дополнительный звуковой сигнал не может быть наложен на видеозапись, сделанную в режиме LP.
- При наложении звука на видеозапись, сделанную другой видеомассеткой (в том числе модели DCR-TRV7E), качество звукового сопровождения может ухудшиться.
- Если во время звукозаписи видеомассетка подключена к телевизору, это может быть причиной помех в акустической системе телевизора. Эти помехи, однако, не влияют на запись.

Audio dubbing

Adding an audio sound on a recorded tape

- Insert your recorded tape into the camcorder.
- While pressing the small green button on the POWER switch, set it to PLAYER.
- On the camcorder, locate the point where the recording should begin by pressing II or III. Then press II to set it to playback pause mode.
- Press AUDIO DUB on the video control compartment or the Remote Commander.
- Press II on the camcorder and at the same time start playing back the audio you want to record. The new sound will be recorded in stereo 2. The recorded sound in stereo 1 is not heard.
- Press II at the point where you want to stop recording.

To play back the new recorded sound

Adjust the balance between the original sound (stereo 1) and the new sound (stereo 2) by selecting AUDIO MIX in menu system.

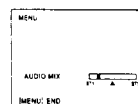
Наложение звука

Наложение звукового сопровождения на видеозапись

- Установите в видеомассетку кассету с записью.
- Удерживая в нажатом положении маленькую зеленую кнопку на переключателе POWER, переведите его в положение PLAYER.
- Нажав кнопку II или III на видеомассетке, найдите место, с которого должна начинаться запись. После этого нажатием кнопки II переведите камеру в режим паузы при воспроизведении.
- Нажмите кнопку AUDIO DUB в секции управления видеофункциями на пульте дистанционного управления.
- Нажмите на видеомассетке кнопку II. Одновременно начав воспроизведение звукового сигнала, который необходимо записать. Новый звуковой сигнал записывается на дорожку стерео 2. Звук, записанный на дорожке стерео 1, при этом не слышен.
- Нажмите II в месте, где Вы хотите прекратить запись.

Прослушивание вновь записанного звука

Выбрав в меню параметров позицию AUDIO MIX, отрегулируйте баланс между звуком оригинала (стерео 1) и наложенным звуком (стерео 2).



Five minutes after when you turn the power off, the settings of AUDIO MIX return to the original sound (stereo 1) only. The factory setting is original sound only.

To end audio more precisely

First, press ZERO SET MEMORY on the Remote Commander at the point where you want to stop recording. Then start recording from step 2, and the recording stops automatically near the counter's zero point.

Более точное окончание наложения звука

Для этого необходимо заранее нажать на пульт дистанционного управления кнопку ZERO SET MEMORY в том месте видеозаписи, где следует прекратить наложение звука. Если затем начать запись звукового сопровождения с операции 2, то она автоматически прекратится при достижении счетчиком нулевой отметки.

Superimposing a title

Наложение титров

If you use a tape with cassette memory, you can superimpose the titles while recording or after recording. When you play back the tape, the title is displayed for 5 seconds from the point where it was superimposed it.

You can select from eight preset titles and one custom (CUSTOM TITLE) to superimpose over the picture.

Superimposing titles

- Press the TITLE button to display the titles on the LCD screen or in the viewfinder.
- Turn the CONTROL dial to select the title, then press the CONTROL dial.
- Turn the CONTROL dial to select the colour, size or position, then press the CONTROL dial.
- Turn the CONTROL dial to select the desired title, then press the CONTROL dial.
- Repeat steps 3 and 4 until the title is arranged as desired.
- Press the CONTROL dial again to complete the setting.

While you are playing back, pausing, or recording:

After step 6, the "SAVE" appears on the screen for 5 seconds and the title is set.

While in Standby mode:

After step 6, the "TITLE" indicator appears. And after you press START/STOP to start recording, the "TITLE" appears on the screen for 5 seconds and the title is set.

Пользуясь видеокассетами с электронной памятью, на видеозаписи можно накладывать титры как во время съемки, так и после окончания. Во время воспроизведения титр будет виден на экране в течение 5 секунд, начиная с точки его наложения. Вы можете выбрать любой из восьми готовых титров или составить один собственный (CUSTOM TITLE).

Как накладывать титры

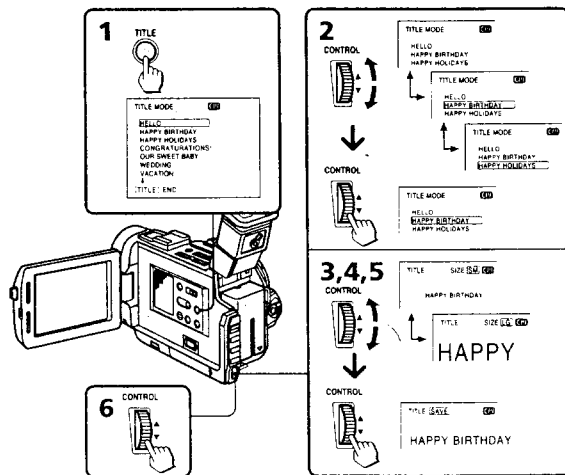
- Нажатием кнопки TITLE выведете на жидкокристаллический экран или экран видеосистемы каталог титров.
- Поворачивая ручку CONTROL, выберите нужный титр и нажмите на ручку CONTROL.
- Поворачивая ручку CONTROL, выберите режим подбора цвета титра, размера шрифта или размещения титра в кадре, и нажмите на ручку CONTROL.
- Выберите нужный вариант поворотом ручки CONTROL и введите его нажатием на эту ручку.
- Повторяйте операции 3 и 4 до тех пор, пока титр не примет устраивающий Вас вид.
- Для завершения процедуры вновь нажмите на ручку CONTROL.

Наложение титров во время воспроизведения, паузы или съемки
После операции 6 на экране на пять секунд появляется слово "SAVE", и титр вводится в память.

Наложение титров режиме ожидания начала съемки
После операции 6 на экране появляется индикатор "TITLE". Затем, когда Вы начинаете запись нажатием кнопки START/STOP, на экран в течение пяти секунд выводится слово "SAVE", и титр вводится в память.

Superimposing a title

Наложение титров



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Superimposing a title

Наложение титров

When placed from the top of the screen as follows:

- WHITE → HAPPY BIRTHDAY → HAPPY HOLIDAYS → CONGRATULATIONS! → SWEET BABY → WEDDING → VACATION → THE END → CUSTOM TITLE.

When you have stored an original title, the "CUSTOM TITLE" appears above "CUSTOM TITLE".

The colour ("COL") changes as follows:

- WHITE → YEL (Yellow) → CYAN (Cyan) → GRN (Green) → VIO (Violet) → RED → BLUE (Blue).

The size ("SIZE") changes as follows:

- SM (Small) → LG (Large).

The position ("POS") changes as follows:

- When you select the title size "SM", you can choose 9 positions at all.

When you select the title size "LG", you can choose 8 positions at all.

When you are searching the tape using the index function, the portion of the tape that is superimposed the title may be detected as an index signal.

When you use a cassette tape set to prevent accidental erasure, you cannot superimpose the title. The protect tab so that the red portion of the tape is visible.

When you superimpose about 11 to 20 titles in a cassette, one title consists of about 5 seconds.

When the cassette has too many index signals and you cannot find the title because the memory is full.

Выводимый на экран каталог титров выглядит следующим образом (сверху вниз):

- HELLO (ПРИВЕТ) → HAPPY BIRTHDAY (С ДНЕМ РОЖДЕНИЯ) → HAPPY HOLIDAYS (ПРИЯТНОГО ОТПУСКА) → CONGRATULATIONS! (ПОЗДРАВЛЯЕМ!) → OUR SWEET BABY (НАШ МАЛЫШ) → WEDDING (СВАДЬБА) → VACATION (В ОТПУСКЕ) → THE END (КОНЕЦ) → CUSTOM TITLE (АВТОРСКИЙ ТИТР).

Если Вы ввели в память собственный титр, то он появляется на экране над надписью "CUSTOM TITLE".

Цвет титра ("COL") меняется в следующем порядке:

- WH (Белый) → YEL (Желтый) → CYAN (Зеленовато-голубой) → GRN (Зеленый) → VIO (Фиолетовый) → RED (Красный) → BLUE (Синий).

Размер шрифта ("SIZE") меняется в следующем порядке:

- LG (Крупный) → SM (Мелкий).

Размещение титра в кадре ("POS") меняется в следующем порядке: Если Вы выбрали крупный шрифт ("LG"), то Вам предоставляется на выбор 8 позиций, а для мелкого шрифта ("SM") - 9 позиций.

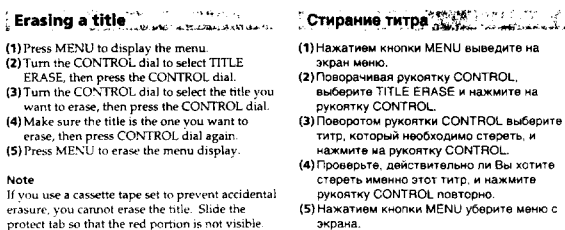
Отмена вывода титра на экран
Выберите позицию OFF в меню TITLE DSPL. Однако независимо от этого титр будет виден на экране во время монтажного поиска или ускоренного просмотра записи.

О титрах
• Наложение титров невозможно во время затемнения и выхода из затемнения.
• Титр нельзя наложить на незаписанный участок ленты.
• Наложение Вами титры будут видны лишь при просмотре записи на видеоаппаратуре формата DV, оснащенной функцией индексирования и наложения титров.
• При поиске нужного фрагмента записи на другой видеоаппаратуре титры могут ошибочно восприниматься как сигналы индексирования.

О видеокассетах
• Если кассета защищена от случайного стирания, то наложение титров невозможно. Верните предохранительную задвижку на место, так чтобы красная пластинка оказалась закрытой.
• На одной видеокассете можно хранить от 11 до 20 титров, если каждый из них состоит примерно из пяти знаков.
• Если видеозапись содержит слишком много сигналов индексирования, то наложение титров может оказаться невозможным из-за перегрузки памяти.

Superimposing a title

Наложение титров



Note
If you use a cassette tape set to prevent accidental erasure, you cannot erase the title. Slide the protect tab so that the red portion is not visible.

Erasing a title

- Нажатием кнопки MENU выведете на экран меню.
- Поворачивая ручку CONTROL, выберите TITLE ERASE и нажмите на ручку CONTROL.
- Поворотом ручки CONTROL выберите титр, который необходимо стереть, и нажмите на ручку CONTROL.
- Проверьте, действительно ли Вы хотите стереть именно этот титр, и нажмите ручку CONTROL повторно.
- Нажатием кнопки MENU уберете меню с экрана.

Примечание
При использовании кассеты, защищенной от случайного стирания, наложение титров стирать невозможно. Переместите защитную задвижку так, чтобы красная пластинка оказалась закрытой.

Advanced operation / Пользование дополнительными функциями

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Making a custom title

If you use a tape with cassette memory, you can make one title of up to 20 characters and store it in memory.

- (1) Press TITLE to display the titles on the LCD screen or in the viewfinder.
- (2) Turn the CONTROL dial to select CUSTOM TITLE, then press the CONTROL dial.
- (3) Turn the CONTROL dial to select the column of the desired character, then press the CONTROL dial.
- (4) Turn the CONTROL dial to select the desired character, then press the CONTROL dial.
- (5) Repeat steps 3 and 4 until you finish the title.
- (6) Turn the CONTROL dial to select [], then press the CONTROL dial.

To erase a character

In step 3, turn the CONTROL dial to select [] then press CONTROL dial. The last character is erased.

To change the title you have made

In step 2, turn the CONTROL dial to select the CUSTOM TITLE, then press the CONTROL dial. Erase characters one after another, then make the new title again.

If it takes more than 5 minutes to make a title
If the Standby mode lasts for more than 5 minutes with a cassette inserted, the power will be turned off automatically. If the power is turned off while you are making a title, set the POWER switch to OFF once, then to CAMERA. The title you have made remains stored in memory.

Ввод авторского титра

Пользуясь видеокассетой с памятью, Вы можете самостоятельно составить и сохранить в памяти титр длиной до 20 знаков.

- (1) Нажатием кнопки TITLE выведете на жидкокристаллический экран или на экран видеосканера каталог титров.
- (2) Поворачивая рукоятку CONTROL, выберите CUSTOM TITLE и нажмите на рукоятку CONTROL.
- (3) Поворачивая рукоятку CONTROL, выберите колонку, в которой находится нужная буква, и нажмите на рукоятку CONTROL.
- (4) Поворачивая рукоятку CONTROL, выберите нужную букву и нажмите на рукоятку CONTROL.
- (5) Повторяя операции 3 и 4, введите титр полностью.
- (6) Поворачивая рукоятку CONTROL, выберите [] и нажмите на рукоятку CONTROL.

Стирание букв

В ходе операции 3 выберите поворотом рукоятки CONTROL позицию [] и нажмите на рукоятку CONTROL. Последняя буква титра при этом стирается.

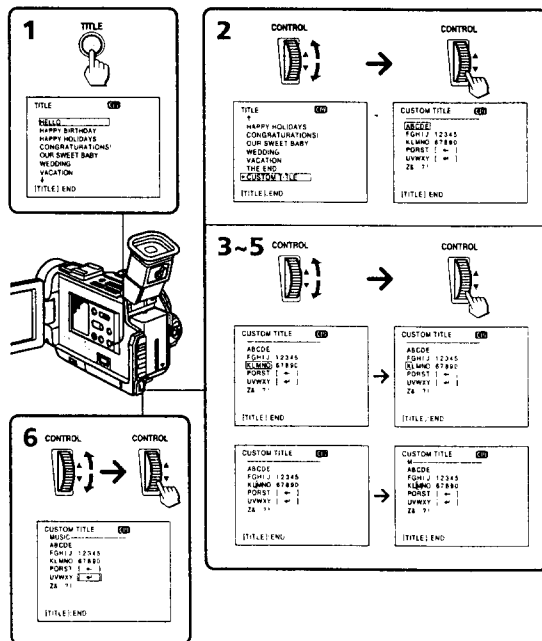
Редактирование авторского титра

В ходе операции 2 поворотом рукоятки CONTROL выберите CUSTOM TITLE. После этого Вы можете стереть буквы одну за другой и ввести вместо них новые.

Если для ввода титра требуется более 5 минут
Если в видеокамеру установлена кассета, то через пять минут пребывания в режиме ожидания съемки питания камеры автоматически отключается. Если это произойдет во время ввода титра, переведите переключатель POWER сначала в положение OFF, а затем в положение CAMERA. Ваш титр остается сохраненным в памяти.

Making a custom title

Ввод авторского титра



Advanced operations / Пользование остальными функциями

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Labeling a cassette

Маркировка кассет

If you use a tape with cassette memory, you can label a cassette. The label can consist of up to 10 characters and is stored in cassette memory. When you insert the labeled cassette and turn the power on, the label is displayed on the LCD screen, in the viewfinder, or on the TV screen.

- (1) Insert the cassette you want to label.
- (2) Set the POWER switch to PLAYER.
- (3) Press MENU to display the menu.
- (4) Turn the CONTROL dial to select TAPE TITLE, then press the CONTROL dial.
- (5) Turn the CONTROL dial to select the column of the desired character, then press the CONTROL dial.
- (6) Turn the CONTROL dial to select the desired character, then press the CONTROL dial.
- (7) Repeat steps 5 and 6 until you finish the label.
- (8) Turn the CONTROL dial to select [], then press the CONTROL dial.

To erase a character

In step 5 turn the CONTROL dial to select [], then press CONTROL dial. The last character is erased.

To change the label you have made

Insert the cassette to change the label, and operate in the same way to make a new label.

If the CH mark appears in step 4

The cassette memory is full. If you erase the title in the cassette, you can label it.

If you have superimposed titles in the cassette
When the label is displayed, up to 4 titles also appear.

Note on "----" indicator displayed on the LCD screen or in the viewfinder

The "----" indicates the number of characters you can select for the label. When the "----" indicator has fewer than 10 spaces, the cassette memory is full.

Note on the cassettes

If you use a cassette tape set to prevent accidental erasure, you cannot label it. Slide the protect tab so that the red portion is not visible.

Видеокассеты с памятью можно маркировать. Маркировка, сохраняемая в электронной памяти кассеты, может включать до 10 знаков. Когда Вы устанавливаете маркированную кассету и включаете видеокамеру, название кассеты выводится на жидкокристаллический экран, экран видеосканера или телевизора.

- (1) Установите в видеокамеру кассету, которую Вы хотите маркировать.
- (2) Переведите переключатель POWER в положение PLAYER.
- (3) Нажатием кнопки MENU вызовите меню на экран.
- (4) Поворачивая рукоятку CONTROL, выберите TAPE TITLE и нажмите на рукоятку CONTROL.
- (5) Поворачивая рукоятку CONTROL, выберите колонку, в которой находится нужная буква, и нажмите на рукоятку CONTROL.
- (6) Поворачивая рукоятку CONTROL, выберите нужную букву и нажмите на рукоятку CONTROL.
- (7) Повторяя операции 5 и 6, введите название полностью.
- (8) Поворачивая рукоятку CONTROL, выберите [] и нажмите на рукоятку CONTROL.

Стирание букв

В ходе операции 5 выберите поворотом рукоятки CONTROL позицию [] и нажмите на рукоятку CONTROL. Последняя буква титра при этом стирается.

Редактирование введенного названия
Установите в видеокамеру кассету, название которой следует отредактировать, и введите название заново.

Если в ходе операции 4 появляется индикатор CH
У кассеты не хватает памяти. Чтобы маркировать ее, необходимо стереть один из записанных на ней титров.

Если в записи на кассете имеются титры
При выводе на экран названия кассеты можно одновременно видеть до 4 титров.

Об индикаторе "----" на жидкокристаллическом экране или в окне видеосканера

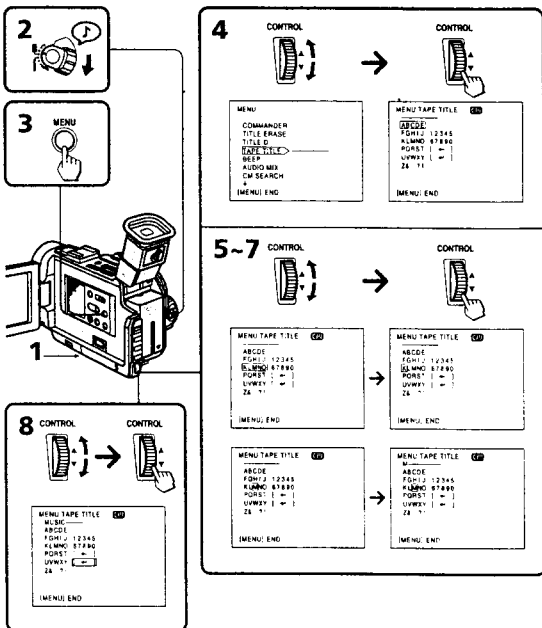
Индикатор "----" указывает число знаков, из которых может состоять название кассеты. Если в индикаторе насчитывается меньше 10 знаков, это значит, что у кассеты не хватает памяти.

О видеокассетах

Если кассета защищена от случайного стирания, то наложения титров невозможно. Верните предохранительную задвижку на место, так, чтобы красная пластинка оказалась закрытой.

Labeling a cassette

Маркировка кассет



Advanced operations / Пользование остальными функциями

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Resetting the date and time

To correct the date and time setting
Repeat steps 2 to 5.

The year indicators changes as follows:

1997 → 1998 → ... 2000 → 2029

Note on the time indicator

The internal clock of this camcorder operates on a 24-hour cycle.

Корректировка даты и времени

Исправление ошибок при установке даты и времени
Повторите операции 2 – 5.

Год на экране сменяется в следующем порядке:

1997 → 1998 → ... 2000 → 2029

Об индикации времени

Встроенные часы данной видеокамеры имеют 24-часовой цикл.

Tips for using the battery pack

This section shows you how you can get the most out of your battery pack.

Preparing the battery pack

Always carry additional batteries

Have sufficient battery pack power to do 2 to 3 times as much recording as you have planned.

Battery life is shorter in a cold environment

Battery efficiency is decreased, and the battery will be used up more quickly, if you are recording in a cold environment.

To save battery power

Do not leave the camcorder in Standby mode when not recording to save the battery power. A smooth transition between scenes can be made even if recording is stopped and started again. While you are positioning the subject, selecting an angle, or looking at the LCD screen or through the viewfinder, the lens moves automatically and the battery is used. The battery is also used when a tape is inserted or removed.

О пользовании аккумуляторной батареей

В настоящем разделе приведены рекомендации по оптимальному использованию возможностей аккумуляторной батареи.

Подготовка батареи к работе

Всегда носите с собой запасные батареи

Заряд имеющихся у Вас под рукой батарей должен в 2 – 3 раза превышать то, что необходимо для планируемой продолжительности съемки.

При низких температурах аккумуляторные батареи разряжаются быстрее.

Если Вы используете видеокамеру на холоде, то эффективность функционирования батарей снижается, и их заряда хватает на меньшее время.

Как сэкономить энергию аккумуляторных батарей

Для экономии энергии в перерывах между съемкой не оставляйте видеокамеру в режиме ожидания. Выключение и включение камеры не нарушает плавности перехода между кадрами. При выборе плана, ракурса съемки, или наблюдения за жидкокристаллическим экраном либо экраном видискателя линза объектива автоматически перемещается с соответствующим расходом энергии батарей. Заряд батареи расходуется также при установке и извлечении кассет.

Additional Information / Дополнительная информация

Tips for using the battery pack

When to replace the battery pack

While you are using your camcorder, the remaining battery indicator on the LCD screen or in the viewfinder decreases gradually as battery power is used up [a]. The remaining time in minutes also appears.

[a] 

When the remaining battery indicator reaches the lowest point, the ∞ indicator appears and starts flashing on the LCD screen or in the viewfinder. When the ∞ indicator on the LCD screen or in the viewfinder changes from slow flashing to rapid flashing while you are recording, set the POWER switch to OFF on the camcorder and replace the battery pack. Leave the tape in the camcorder to obtain a smooth transition between scenes after the battery pack has been replaced.

Notes on the rechargeable battery pack

Caution

Never leave the battery pack in temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.

The battery pack heats up

During charging or recording, the battery pack heats up. This is caused by energy that has been generated and a chemical change that has occurred inside the battery pack. This is not cause for concern, and is normal.

Battery pack care

- Remove the battery pack from the camcorder after using it, and keep it in a cool place. When the battery pack is installed to the camcorder, a small amount of current flows to the camcorder even if the POWER switch is set to OFF. This shortens battery life.
- The battery pack is always discharging even when it is not in use after charging. Therefore, you should charge the battery pack right before using the camcorder.

О пользовании аккумуляторной батареей

Когда следует заменять аккумуляторную батарею

В процессе пользования видеокамерой указатель на жидкокристаллическом экране или в окне видискателя показывает постепенное уменьшение оставшегося заряда батареи [a]. При этом на экран выводится также оставшееся время работы камеры в минутах.

После того, как указатель оставшегося заряда батареи доходит до нижней точки, в окне видискателя появляется мигающий индикатор ∞. Когда медленное мигание индикатора на жидкокристаллическом экране или в окне видискателя перейдет в быстрое, установите переключатель POWER в положение OFF и замените аккумуляторную батарею. Не извлекайте из видеокамеры кассету, чтобы переход от последнего перед заменой батареи кадра к следующему получился плавным.

Сведения об аккумуляторной батарее

Внимание!

Никогда не оставляйте батарею в местах, где возможно повышение температуры сверх 60°C (140°F), например в автомобиле, запаркованном в солнечном месте, или под прямыми лучами солнца.

Нагревание батареи

Во время зарядки или работы видеокамеры батарея нагревается. Это нормальное явление, которое связано с выделением электроэнергии и химическими процессами внутри батареи, и не является поводом для беспокойства.

Уход за аккумуляторной батареей

- По окончании пользования батареей отделяйте ее от видеокамеры и храните в прохладном месте. Когда батарея подсоединена к камере, камера поглощает небольшое количество электроэнергии, даже если переключатель POWER находится в положении OFF, в результате чего батарея разряжается.
- Разряжение заряженной батареи происходит даже тогда, когда ею не пользуются. Поэтому батарее следует заряжать непосредственно перед началом съемки.

Tips for using the battery

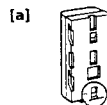
The switch on the battery pack

This switch is provided so that you can identify a charged battery pack. Set the switch to the "green mark" position when charging is completed. [a] (When the battery pack is removed from the AC power adaptor after charging, the switch automatically moves to the "green mark" position.)

О пользовании аккумуляторной батареей

Переключатель на корпусе аккумуляторной батареи

Назначение этого переключателя - помочь Вам отличить заряженные батареи от незаряженных. Зарядив батарею, установите переключатель на зеленую отметку. [a] (При отключении заряженной батареи от адаптера сетевого питания переключатель автоматически устанавливается на зеленую отметку.)



The life of the battery pack

If the battery indicator flashes rapidly just after turning on the camcorder with a fully charged battery pack, the battery pack should be replaced with a new fully charged one.

Charging temperature

You should charge batteries at temperatures from 10°C to 30°C (from 50°F to 86°F). Lower temperatures require a longer charging time.

Срок службы аккумуляторной батареи

Если сразу после включения видеокамеры с полностью заряженной батареей индикатор заряда начинает быстро мигать, ее следует заменить на новую, также полностью заряженную батарею.

Температура зарядки

Аккумуляторные батареи следует заряжать при температуре от 10°C до 30°C (50°F – 86°F). При более низких температурах продолжительность зарядки увеличивается.

Additional Information / Дополнительная информация

Tips for using the battery pack

Notes on the "InfoLITHIUM" Battery Pack

What is the "InfoLITHIUM" battery pack?

The "InfoLITHIUM" battery pack is a lithium battery pack which can exchange data with compatible video equipment about its battery consumption.

We recommend that you use the "InfoLITHIUM" battery pack with video equipment having the "InfoLITHIUM" mark. When you use this battery pack with video equipment having the "InfoLITHIUM" mark, the equipment will indicate the remaining recording time in minutes.*

*The indication may not be accurate depending on the condition and environment which the equipment is used under.

How the battery consumption is displayed

- Battery consumption of the camcorder varies depending on its use, such as whether the LCD is used or not, how the autofocus is used or not.
- The checking the condition of the camcorder, the "InfoLITHIUM" battery pack measures the battery consumption and calculates the remaining battery power. If the condition changes drastically, the remaining battery consumption may suddenly decrease or increase by more than 2 minutes.
- If 5 to 10 minutes is indicated as the battery remaining time on the LCD or viewfinder, the LCD or viewfinder may flash under some conditions.

О пользовании аккумуляторной батареей

Батарея "InfoLITHIUM"

Что собой представляет аккумуляторная батарея "InfoLITHIUM"

Батарея "InfoLITHIUM" - это литиевая аккумуляторная батарея, которая может обмениваться с приспособленной для этого видеоаппаратурой данными о состоянии и расходе своего заряда.

Компания Sony рекомендует Вам приобретать для видеоаппаратуры, на которой имеется обозначение "InfoLITHIUM", аккумуляторные батареи "InfoLITHIUM". При использовании этих батарей такая аппаратура сообщает Вам об оставшемся времени работы от батареи в минутах.*

*Точность указания оставшегося времени зависит от условий и обстоятельств эксплуатации аппаратуры.

Как отображается потребление энергии батареей

Интенсивность, с которой видеокамера потребляет энергию, зависит от режима ее эксплуатации (использование жидкокристаллического экрана, автоматический наводка на резкость и т.д.). Анализируя состояние видеокамеры, батарея "InfoLITHIUM" замеряет потребление энергии и рассчитывает, на какое время хватит имеющегося в ней заряда. При резком изменении режима работы камеры индицируемая величина оставшегося времени работы может сразу возрасти или сократиться более чем на 2 минуты. В некоторых случаях мигающий индикатор на экране или в окне видоискателя, даже если по указателю оставшееся время работы составляет еще от 5 до 10 минут.

Tips for using the battery pack

To obtain more accurate remaining battery indication

Set the camcorder to recording standby mode and point towards a stationary object. Do not move the camcorder for 30 seconds or more.

- If the indication seems incorrect, use up the battery and then recharge it fully (Full charge¹⁾). Note that if you have used the battery in a hot or cold environment for long time, or you have repeated charging many times, the battery may not be able to show the correct time even after being fully charged.
- After you have used the InfoLITHIUM battery pack with an equipment not having the InfoLITHIUM mark, make sure that you use up the battery on the equipment having the InfoLITHIUM mark and then recharge fully.

Why the remaining battery indication does not match the continuous recording time in the operation manual

The recording time is affected by the environmental temperature and conditions. The recording time becomes very short in a cold environment. The continuous recording time in the operation manual is measured under the condition of using a fully charged (or normal charged²⁾) battery pack in 25 °C (77 °F). As the environmental temperature and condition are different when you actually use the camcorder, the remaining battery time is not same as the continuous recording time in the operation manual.

- ¹⁾ Full charge: Charging for about 1 hour after the charge lamp of the AC power adaptor goes off.
- ²⁾ Normal charge: Charging just until the charge lamp of the AC power adaptor goes off.

О пользовании аккумуляторной батареей

Как получить более точные данные об оставшемся заряде батареи

Переведите видеокамеру в режим ожидания начала съемки и направьте объектив на неподвижный предмет. Не двигайте камеру в течение по крайней мере 30 секунд.

- Если показания индикатора явно неточны, разрядите батарею и вновь полностью зарядите ее (заряджение на полную емкость¹⁾). Следует иметь в виду, что после длительного пользования батареей при высоких или низких температурах либо после многократной подзарядки батарея не всегда бывает способна выдавать точные данные о величине заряда, даже будучи полностью заряженной.
- Если Вы пользовались батареей InfoLITHIUM для питания аппаратуры, не имеющей обозначения "InfoLITHIUM", то батарею после этого необходимо разрядить на аппаратуре, имеющей обозначение "InfoLITHIUM", а затем вновь зарядить на полную емкость.

Почему показания индикатора оставшегося заряда батареи не соответствуют продолжительности непрерывной съемки, указанной в инструкции по эксплуатации

Продолжительность съемки зависит от температуры окружающего воздуха и других условий эксплуатации. При низких температурах она значительно сокращается. Продолжительность непрерывной съемки, указанная в инструкции, измерена для полностью заряженной (или стандартно заряженной²⁾) батареи при температуре 25 °C (77 °F). Поскольку реальные условия и температура эксплуатации видеокамеры бывают иными, оставшийся заряд батареи может не соответствовать приведенной в инструкции продолжительности непрерывной съемки.

- ¹⁾ Заряджение на полную емкость: заряджение в течение примерно одного часа после того, как перестала светиться лампочка заряда на адаптере сетевого питания.
- ²⁾ Стандартное заряджение: заряджение до того момента, когда лампочка заряда на адаптере сетевого питания перестает светиться.

Additional Information / Дополнительная информация

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Tips for using the battery

Notes on charging

A brand-new battery pack

A brand-new battery pack is not charged. Before using the battery pack, charge it completely.

Recharge the battery pack whenever you like

You do not have to discharge it before recharging. If you charged the battery pack fully but did not use it for a long time, it becomes discharged. Then recharge the battery pack.

Notes on the terminals

If the terminals (metal parts on the back) are not clean, the battery charge duration will be shortened.

If the terminals are not clean or when the battery pack has not been used for a long time, please install and remove the battery pack a few times. This improves the contact condition. Do not use the +, - and C terminals with a soft cloth or paper.

Be sure to observe the following

- Do not charge the battery pack away from fire.
- Do not charge the battery pack dry.
- Do not open nor try to disassemble the battery pack.
- Do not expose the battery pack to any mechanical shock.

О пользовании аккумуляторной батареей

Заряджение батареи

Новая аккумуляторная батарея

Аккумуляторные батареи продаются незаряженными. Перед использованием батарей их необходимо полностью зарядить.

Подзаряжать батарею можно в любой момент по Вашему усмотрению

Перед этим ее не обязательно разряжать полностью. Если Вы, полностью зарядив батарею, не пользуетесь ею в течение долгого времени, батарея частично разряжается. В таких случаях перед началом пользования ее следует подзарядить.

О контактах батареи

Если контакты батареи (металлические части на внутренней стороне корпуса) загрязнены, то ее емкость уменьшается. В случае загрязнения контактов или в случае, если батареей не пользовались в течение длительного времени, батарее следует присоединить к камере и отсоединить от нее несколько раз подряд. Это поможет улучшить состояние контактов. Кроме того, контакты, обозначенные символами +, - и C, следует протереть мягкой материей или бумагой.

Не забывайте о следующих мерах предосторожности:

- Берегите батарею от огня.
- Не допускайте намокания батареи.
- Не вскрывайте корпус батареи и не пытайтесь разбирать ее.
- Не подвергайте батарею резким механическим воздействиям.

Maintenance information and precautions

Moisture condensation

If the camcorder is brought directly from a cold place to a warm place, moisture may condense inside the camcorder, on the surface of the tape, or on the lens. In this condition, the tape may stick to the head drum and be damaged or the camcorder may not operate correctly. To prevent possible damage under these circumstances, the camcorder is furnished with moisture sensors. Take the following precautions.

Inside the camcorder

If there is moisture inside the camcorder, the beep sounds and the "W" indicator flashes. If this happens, none of the function except cassette ejection will work. Open the cassette compartment, turn off the camcorder, and leave it about 1 hour. When "W" indicator flashes at the same time, the cassette is inserted in the camcorder. Eject the cassette, turn off the camcorder, and leave also the cassette about 1 hour.

On the lens

If moisture condenses on the lens, no indicator appears, but the picture becomes dim. Turn off the power and do not use the camcorder for about 1 hour.

How to prevent moisture condensation

When bringing the camcorder from a cold place to a warm place, put the camcorder in a plastic bag and allow it to adapt to room conditions over a period of time.

- (1) Be sure to tightly seal the plastic bag containing the camcorder.
- (2) Remove the bag when the air temperature inside it has reached the temperature surrounding it (after about 1 hour).

Рекомендации по уходу и меры предосторожности

Конденсация влаги

При непосредственном попадании видеокамеры с холода в теплое место на ее внутренних деталях, на поверхности магнитной ленты и на линзе объектива может произойти конденсация влаги. В результате этого возможно прилипание ленты к барабану видеоголовки и ее повреждение, а также другие сбои в работе видеокамеры. Во избежание повреждений, вызванных подобными причинами, камера оснащена детекторами влажности. При использовании ею необходимо соблюдать следующие меры предосторожности.

Влага внутри видеокамеры

При попадании влаги внутрь видеокамеры подается сигнал бипера и появляется мигающий индикатор "W". При этом отключаются все функции камеры кроме открывания кассетоприемника для извлечения кассеты. Откройте кассетоприемник, выключите камеру и оставьте ее в таком положении примерно на один час. Если мигает также индикатор "W", это значит, что в видеокамере имеется кассета. Извлеките ее, выключите камеру, и дайте кассете также просохнуть в течение одного часа.

Влага на линзе объектива

Конденсация влаги на линзе объектива не приводит к появлению каких-либо индикаторов, но изображение при этом становится расплывчатым. Выключите питание и не пользуйтесь камерой в течение примерно одного часа.

Как предотвратить конденсацию влаги

При перемещении видеокамеры с холода в теплое место помещайте ее в пластиковый пакет и дайте ей время адаптироваться к комнатным условиям.

- (1) Пластиковый пакет с камерой обязательно должен быть плотно закрыт.
- (2) Извлекать камеру из пакета следует после того, как температура внутри него сравняется с температурой окружающего воздуха (примерно через один час).

Additional Information / Дополнительная информация



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Maintenance information and precautions

Video head cleaning

To ensure normal recording and clear pictures, clean the video heads.

The video heads may be dirty when:



- mosaic-pattern noise appears on the playback picture
- playback pictures do not move
- playback pictures are hardly visible
- playback pictures do not appear
- the  indicator and "CLEANING CASSETTE" message appear one after another or the  indicator flashes on the LCD screen or in the viewfinder

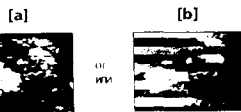


Рекомендации по уходу и меры предосторожности

Очистка видеоголовки

Для обеспечения должного качества съемки и четкости изображения видеоголовки необходимо время от времени очищать. Признаком загрязнения видеоголовки могут быть:

- "мозаичные" помехи при воспроизведении видеозаписи
- сбои в движении изображения
- плохая различимость изображения
- исчезновение изображения
- последовательное появление на жидкокристаллическом экране или в окне видеосъемателя индикатора  и сообщения "CLEANING CASSETTE" либо мигание индикатора 



If [a] or [b] happens, clean the video heads with the Sony DVM12CL cleaning cassette (not supplied). Check the picture and if the above problem persists, repeat the cleaning. (Do not repeat cleaning more than 5 times in one session.)

Note
If the DVM12CL cleaning cassette (not supplied) is not available in your area, consult your nearest Sony dealer.

В случае [a] или [b] видеоголовки необходимо очистить при помощи чистящей кассеты Sony DVM12CL (в комплект не входит). После этого следует проверить качество изображения и, если оно не восстановилось, повторить чистку головок (эту процедуру не следует повторять более пяти раз подряд).

Примечание
Если чистящую кассету DVM12CL (в комплект не входит) невозможно приобрести там, где Вы живете, обратитесь к ближайшему дилеру фирмы Sony.

Maintenance information and precautions

Precautions

Camcorder operation

- Operate the camcorder on 7.2 V (battery pack) or 8.4 V (AC power adaptor).
- Should any solid object or liquid get inside the casing, unplug the camcorder and have it checked by Sony dealer before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch set to OFF when not using the camcorder.
- Do not wrap up the camcorder and operate it since heat may build up internally.
- Keep the camcorder away from strong magnetic fields or mechanical vibration.

On handling tapes

- Do not insert anything in the small holes on the cassette.
- Do not open the tape protect cover or touch the tape.
- Avoid touching or damaging the terminals. To remove dust, clean the terminals with a soft cloth.

Camcorder care

- When the camcorder is not to be used for a long time, disconnect the power source and remove the tape. Periodically turn on the power, operate the camera and play sections and play back a tape for about 3 minutes.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on the lens, remove them with a soft cloth.
- Clean the camcorder body with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.
- Do not let sand get into the camcorder. When you use the camcorder on a sandy beach or in a dusty place, protect it from the sand or dust. Sand or dust may cause the unit to malfunction, and sometimes this malfunction cannot be repaired.

Рекомендации по уходу и меры предосторожности

Меры предосторожности

Эксплуатация видеокамеры

- Видеокамера работает от источников питания с напряжением 7,2 В (аккумуляторная батарея) или 8,4 В (адаптер сетевого питания).
- В случае попадания внутрь корпуса каких-либо посторонних предметов или жидкостей отключите видеокамеру от сети и не пользуйтесь ею до тех пор, пока ее не проверит дилер фирмы Sony.
- Берегите камеру от резких сотрясений и ударов. Особенно следует относиться к линзе объектива.
- Когда Вы не используете видеокамеру, переключатель POWER должен находиться в положении OFF.
- Не заворачивайте видеокамеру во что-либо при съемке во избежание ее перегрева.
- Не подвешивайте камеру воздействию сильных магнитных полей или механической вибрации.

Обращение с видеокассетами

- Не просовывайте посторонних предметов в отверстия, имеющиеся в корпусе видеокассеты.
- Не вскрывайте кожух, защищающий видеоленту, и не прикасайтесь к ленте.
- Старайтесь не прикасаться к электронным контактам, чтобы не повредить их. Очищайте поверхность контактов от пыли мягкой материей.

Уход за видеокамерой

- Если Вы в течение долгого времени не собираетесь пользоваться камерой, отключите ее от источника питания и извлеките видеокассету. Время от времени следует включать питание в режимах видеосъемки и воспроизведения и воспроизводить видеозаписи в течение примерно 3 минут.
- Очищайте линзу объектива от пыли мягкой кисточкой. В случае появления на ней отпечатков пальцев сотрите их мягкой материей.
- Корпус видеокамеры следует протирать куском мягкой материи, сухим или слегка смоченным слабым раствором моющего средства. Не пользуйтесь растворителями, способными повредить поверхность корпуса.
- Не допускайте попадания песка внутрь видеокамеры. Вода, съемка на пляже или в сильно запыленных местах, берегите камеру от песка и пыли. Песок или пыль могут вызвать поломку видеокамеры, которую не всегда удается устранить.

Additional Information / Дополнительная информация

Maintenance information and precautions

AC power adaptor

Charging

- Use only an InfoLITHIUM type battery pack.
- Place the battery pack on a flat surface without vibration during charging.
- The battery pack will get hot during charging. This is normal.

Others

- Unplug the unit from the mains when not in use for a long time. To disconnect the mains lead, pull it out by the plug. Never pull the cord itself.
- Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
- Do not bend the AC power cord forcibly, or put a heavy object on it. This will damage the cord and may cause a fire or an electrical shock.
- Be sure that nothing metallic comes into contact with the metal parts of the connecting plate. If this happens, a short may occur and the unit may be damaged.
- Always keep the metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation.
- The unit becomes warm while in use. This is normal.
- Do not place the unit in locations that are:
 - Extremely hot or cold
 - Dusty or dirty
 - Very humid
 - Vibrating

Рекомендации по уходу и меры предосторожности

Адаптер сетевого питания

Зарядка батарей

- Пользуйтесь только аккумуляторными батареями InfoLITHIUM типа.
- Батарею следует заряжать на ровной поверхности, не подверженной вибрации.
- В процессе зарядки батарей нагревается. Это нормально.

Прочее

- Если Вы не намерены пользоваться аппаратом в течение долгого времени, отключите его от сети. При этом провод питания следует вынимать из розетки, держа его за вилку. Никогда не тяните за шнур.
- Не пользуйтесь аппаратом, если у него поврежден шнур питания или если Вы уронили или повредили сам аппарат.
- Не перегибайте провод сетевого питания и не ставьте на него тяжелые предметы. Это может вызвать повреждение провода, привести к возгоранию или поражению электрическим током.
- Не допускайте соприкосновения металлических предметов с металлическими частями контактной пластины. Это может привести к короткому замыканию и повреждению адаптера.
- Всегда держите металлические контакты в чистоте.
- Не разбирайте аппарат.
- Не подвержайте аппарат резким механическим воздействиям и не роняйте его.
- Во время пользования адаптером, особенно при зарядке батарей, держите его вдали от радиоприемников диапазона AM и от видеоприемников, поскольку он может создать помехи в их работе.
- В процессе работы адаптер нагревается. Это нормально.
- Не оставляйте аппарат в местах, где:
 - Слишком жарко или холодно
 - Пыльно или грязно
 - Очень сыро
 - Имеется вибрация

Maintenance information and precautions

Note on dry batteries

To avoid possible damage from battery leakage or corrosion, observe the following.

- Be sure to insert the batteries in the correct direction.
- Dry batteries are not rechargeable.
- Do not use a combination of new and old batteries.
- Do not use different types of batteries.
- The batteries slowly discharge while not in use.
- Do not use a battery that is leaking.

If battery leakage occurred

- Wipe off the liquid in the battery case carefully before replacing the batteries.
- If you touch the liquid, wash it off with water.
- If the liquid get into your eyes, wash your eyes with a lot of water and then consult a doctor.

If any difficulty should arise, unplug the unit and contact your nearest Sony dealer.

Рекомендации по уходу и меры предосторожности

О сухих батарейках

- Во избежание повреждений, которые могут быть вызваны коррозией или протеканием батарей, помните о следующем:
- Следите за правильностью установки батареек.
- Сухие батарейки не рассчитаны на подзарядку.
- Не пользуйтесь одновременно новыми и старыми батарейками.
- Не устанавливайте вместе батарейки разных типов.
- Если батарейки не используются, они постепенно разряжаются.
- Не пользуйтесь батарейкой, если она протекает.

В случае протекания батареек

- Прежде, чем заменить батарейки, тщательно протрите отделение, где они были установлены, чтобы удалить следы электролита.
- При попадании электролита на кожу смойте его водой.
- В случае попадания электролита в глаза обильно промойте их водой и обратитесь к врачу.

Если у Вас возникли какие-либо затруднения, отключите аппарат от сети и обратитесь к ближайшему дилеру фирмы Sony.

Additional Information / Дополнительная информация

Using your camcorder abroad

Each country or area has its own electric and TV systems. Before using your camcorder, check the following points.

Power sources

Use your camcorder in any country or area with the supplied AC power adaptor within 100 to 240 V AC, 50/60 Hz.

Difference in colour systems

Your camcorder is a PAL system-based camcorder. If you want to view the playback on a TV, it must be a PAL system-based TV. See the following list.

PAL system

Austria, Belgium, China, Denmark, France, Germany, Great Britain, Holland, Hong Kong, Japan, Kuwait, Malaysia, New Zealand, Portugal, Singapore, Spain, Sweden, Switzerland and Thailand, etc.

SECAM system

Algeria, Brazil, Bulgaria, Cambodia, Cameroon, Congo, Cuba, Czech Republic, France, Guinea, Hungary, Iran, Iraq, Monaco, Poland, Russia, Romania, Slovakia, Ukraine, etc.

PAL-M system

Argentina, Paraguay, Uruguay

SECAM system

Algeria, Czech Republic, France, Guinea, Hungary, Iran, Iraq, Monaco, Poland, Russia, Romania, Slovakia, Ukraine, etc.

Пользование видеокамерой в зарубежных поездках

В разных странах и географических регионах используются различные режимы сетевого электропитания и цветного телевидения. Прежде чем отправиться с видеокамерой в зарубежную поездку, обратитесь к информации, приведенной ниже.

Источники питания

Прилагаемый адаптер сетевого питания можно использовать в любой стране или регионе, где напряжение электрической сети составляет от 100 до 240 В при частоте 50/60 Гц.

Системы цветного телевидения

Данная видеокамера работает в системе PAL. Чтобы просматривать отснятое изображение на телевизионном экране, Вам понадобится телевизор системы PAL. Обратитесь к приведенному ниже перечню.

Система PAL

Австралия, Австрия, Бельгия, Великобритания, Германия, Гонконг, Дания, Испания, Италия, Китай, Кувейт, Малайзия, Нидерланды, Новая Зеландия, Норвегия, Португалия, Сингапур, Таиланд, Финляндия, Швейцария, Швеция и др. страны

Система PAL-M

Бразилия

Система PAL-N

Аргентина, Парагвай, Уругвай

Система NTSC

Багамские Острова, Боливия, Венесуэла, Канада, Колумбия, Корея, Мексика, Перу, Суринам, США, Тайвань, Филиппины, Центральная Америка, Чили, Эквадор, Ямайка, Япония и др. страны

Система SECAM

Болгария, Венгрия, Гайана, Ирак, Иран, Монако, Польша, Россия, Словацкая Республика, Украина, Франция, Чешская Республика и др. страны

English

Trouble check

If you run into any problem using the camcorder, use the following table to troubleshoot the problem. Should the difficulty persist, disconnect the power source and contact your Sony dealer or local authorized Sony service facility.

Camcorder

Power

Symptom	Cause and/or corrective actions
The power is not on.	<ul style="list-style-type: none"> The battery pack is not installed. <ul style="list-style-type: none"> Install the battery pack. (p. 7) The battery is dead. <ul style="list-style-type: none"> Use a charged battery pack. (p. 7) The AC power adaptor is not connected to mains. <ul style="list-style-type: none"> Connect the AC power adaptor to mains. (p. 27)
The power goes off.	<ul style="list-style-type: none"> While being operated in CAMERA mode, the camcorder has been in Standby mode for more than 5 minutes. <ul style="list-style-type: none"> Set the POWER switch to OFF, then to CAMERA. (p. 13) The battery is dead. <ul style="list-style-type: none"> Use a charged battery pack. (p. 7)
The battery pack is quickly discharged.	<ul style="list-style-type: none"> The ambient temperature is too low. (p. 81) The battery pack has not been charged fully. <ul style="list-style-type: none"> Charge the battery pack again. (p. 7) The battery pack is completely dead, and cannot be recharged. <ul style="list-style-type: none"> Use another battery pack. (p. 27)

Operation

Symptom	Cause and/or corrective actions
START/STOP does not operate.	<ul style="list-style-type: none"> The tape is stuck to the drum. <ul style="list-style-type: none"> Eject the tape. (p. 11) The tape has run out. <ul style="list-style-type: none"> Rewind the tape or use a new one. (p. 23) The POWER switch is set to PLAYER. <ul style="list-style-type: none"> Set it to CAMERA. (p. 12) The tab on the cassette is out (red). <ul style="list-style-type: none"> Use a new tape or slide the tab. (p. 11)
The cassette cannot be removed from the holder.	<ul style="list-style-type: none"> The battery is dead. <ul style="list-style-type: none"> Use a charged battery pack or the AC power adaptor. (p. 7, 27)
⏏ and ⏻ indicators flash and no function except for cassette ejection works.	<ul style="list-style-type: none"> Moisture condensation has occurred. <ul style="list-style-type: none"> Remove the cassette and leave the camcorder for at least 1 hour. (p. 87)
"CLOCK SET" appears when the camcorder is turned on.	<ul style="list-style-type: none"> Reset the date and time. (p. 79)
The End Search function does not activate.	<ul style="list-style-type: none"> The cassette was ejected after you recorded on it. <ul style="list-style-type: none"> The End Search function will not activate until you make a new recording after reinserting the cassette. The tape without cassette memory ejected after recording.

Continued to the next page

Trouble check

Operation

Symptom	Cause and/or corrective actions
The tape does not move when a tape ejection button is pressed.	<ul style="list-style-type: none"> The POWER switch is set to CAMERA or OFF. <ul style="list-style-type: none"> Set it to PLAYER. (p. 23) The tape has run out. <ul style="list-style-type: none"> Rewind the tape or use a new one. (p. 23)
Only a low sound is heard when playing back a tape.	<ul style="list-style-type: none"> The volume is turned to the minimum. <ul style="list-style-type: none"> Open the LCD panel and press VOLUME +. (p. 23) AUDIO MIX is set to ST2 side in the menu system. <ul style="list-style-type: none"> Adjust AUDIO MIX in the menu system. (p. 67)
No sound added to the recorded tape is heard.	<ul style="list-style-type: none"> AUDIO MIX is set to ST1 side in the menu system. <ul style="list-style-type: none"> Adjust AUDIO MIX in the menu system. (p. 67)
Still shot function does not activate.	<ul style="list-style-type: none"> STEADYSHOT is set to OFF in the menu system. <ul style="list-style-type: none"> Set it to ON. (p. 29)
The camcorder stops at once.	<ul style="list-style-type: none"> The POWER switch is set to PHOTO. <ul style="list-style-type: none"> Set it to CAMERA. (p. 16)
The camcorder stops in a few seconds.	<ul style="list-style-type: none"> The START/STOP MODE switch is set to S5EC or ⏏ ANTI GROUND SHOOTING. <ul style="list-style-type: none"> Set it to ⏏. (p. 16)
The focus function does not activate.	<ul style="list-style-type: none"> Focus is set to the manual mode. <ul style="list-style-type: none"> Set it to autofocus. (p. 44) Shooting conditions are not suitable for autofocus. <ul style="list-style-type: none"> Set focus to manual mode to focus manually. (p. 44)
The timer function does not work.	<ul style="list-style-type: none"> The START/STOP MODE switch is set to S5EC or ⏏ ANTI GROUND SHOOTING. <ul style="list-style-type: none"> Set it to ⏏. (p. 16)
The title is not displayed.	<ul style="list-style-type: none"> TITLE DSPL is set to OFF in the menu system. <ul style="list-style-type: none"> Set it to ON in the menu system. (p. 29)
The title is not recorded.	<ul style="list-style-type: none"> The tape has no cassette memory. <ul style="list-style-type: none"> Use a tape with cassette memory. (p. 68) The cassette memory is full. <ul style="list-style-type: none"> Erase another title. (p. 71) The tape is set to prevent accidental erasure. <ul style="list-style-type: none"> Slide the protect tab so that red portion is not visible. (p. 70) The fader function is working. <ul style="list-style-type: none"> Wait until the fader function is finished. (p. 35) Nothing is recorded in that position on the tape. <ul style="list-style-type: none"> Superimpose the title to the recorded position. (p. 70)
The cassette label is not recorded.	<ul style="list-style-type: none"> The tape has no cassette memory. <ul style="list-style-type: none"> Use a tape with cassette memory. (p. 74) The cassette memory is full. <ul style="list-style-type: none"> Erase some titles. (p. 74) The tape is set to prevent accidental erasure. <ul style="list-style-type: none"> Slide the protect tab so that red portion is not visible. (p. 74)
The recorded date, date search and time search does not work.	<ul style="list-style-type: none"> The tape has no cassette memory. <ul style="list-style-type: none"> Use a tape with cassette memory. (p. 52) CM SEARCH is set to OFF in the menu system. <ul style="list-style-type: none"> Set it to ON. (p. 52)

Trouble check

Operation

Symptom	Cause and/or corrective actions
The title search function does not work.	<ul style="list-style-type: none"> The tape has no cassette memory. <ul style="list-style-type: none"> Use a tape with cassette memory. (p. 57) CM SEARCH is set to OFF in the menu system. <ul style="list-style-type: none"> Set it to ON. (p. 56) There is no title in the tape. <ul style="list-style-type: none"> Superimpose the titles. (p. 68)
⏏ indicator does not appear when using a tape with cassette memory.	<ul style="list-style-type: none"> The gold-plated connector of the tape is dirty or dusty. <ul style="list-style-type: none"> Clean the gold-plated connector. (p. 77)
Picture	
The image on the viewfinder screen is not clear.	<ul style="list-style-type: none"> The viewfinder lens is not adjusted. <ul style="list-style-type: none"> Adjust the viewfinder lens. (p. 13)
A vertical band appears when a subject such as lights or a candle flame is shot against a dark background.	<ul style="list-style-type: none"> The contrast between the subject and background is too high. The camcorder is not malfunctioning. <ul style="list-style-type: none"> Change locations.
The picture is "noisy" or does not appear.	<ul style="list-style-type: none"> The video heads may be dirty. <ul style="list-style-type: none"> Clean the heads using the Sony DVM12CL (not supplied) cleaning cassette. (p. 88)
⏏ indicator flashes on the LCD screen or in the viewfinder.	<ul style="list-style-type: none"> The video heads may be dirty. <ul style="list-style-type: none"> Clean the heads using the Sony DVM12CL (not supplied) cleaning cassette. (p. 88)
The picture is too bright or too dark.	<ul style="list-style-type: none"> LCD BRIGHT is not adjusted properly. <ul style="list-style-type: none"> Press + or - to obtain the brightness you want. (p. 17, 23)
A vertical band appears when shooting a very bright subject.	<ul style="list-style-type: none"> The camcorder is not malfunctioning.
The picture does not appear on the LCD screen or in the viewfinder.	<ul style="list-style-type: none"> Incorporated fluorescent tube is worn out. <ul style="list-style-type: none"> Please contact your nearest Sony dealer.
The picture does not appear in the viewfinder.	<ul style="list-style-type: none"> If VF PW-SAVE is set to ON in the menu system, the picture disappears automatically when you turn your face away from the viewfinder. <ul style="list-style-type: none"> Bring your face close to the viewfinder within 1 cm (1/2 inch). Or, set VF PW-SAVE to OFF. (p. 31) The LCD panel is open. <ul style="list-style-type: none"> Close the LCD panel.
The picture in the viewfinder does not disappear even VF PW-SAVE is set to OFF in the menu system.	<ul style="list-style-type: none"> Sunlight or the incandescent lamp may prevent the viewfinder sensor from working correctly. This is not a malfunction.
An unknown picture is displayed in the viewfinder or on the LCD screen.	<ul style="list-style-type: none"> If 10 minutes elapse after you set the POWER switch to CAMERA without inserting a cassette, the camcorder automatically starts the demonstration or DEMO is set to ON in the menu system. <ul style="list-style-type: none"> Insert the cassette and the demonstration stops. You can deactivate the demonstration. (p. 115)

Continued to the next page

Trouble check

Others

Symptom	Cause and/or corrective actions
While editing using the DV connecting cable, recording picture cannot be monitored.	<ul style="list-style-type: none"> Remove the DV connecting cable, and connect it again.
The camcorder becomes warm.	<ul style="list-style-type: none"> If the power of the camcorder is on for a long time, it becomes warm, which is not malfunction.
The supplied Remote Commander does not work.	<ul style="list-style-type: none"> Something is blocking the infrared rays. <ul style="list-style-type: none"> Remove the obstacle. The battery is not inserted with the correct polarity. <ul style="list-style-type: none"> Insert the battery with the correct polarity. (p. 112) The batteries are dead. <ul style="list-style-type: none"> Insert new ones. (p. 112)
No function works though the power is on.	<ul style="list-style-type: none"> Disconnect the connection plug on the battery pack or on the AC power adaptor, then reconnect it in about 1 minute. Turn the power on. If the functions still do not work, open the LCD screen and press the RESET button above the FOCUS switch using a sharp-pointed object. (If you press the RESET button, all the settings including the date and time return to the default.) (p. 79)
The numbers or letters of 5 characters is displayed as a counter.	<ul style="list-style-type: none"> Self-diagnosis function was activated. <ul style="list-style-type: none"> See the table in page 98 and treat the camcorder appropriately.

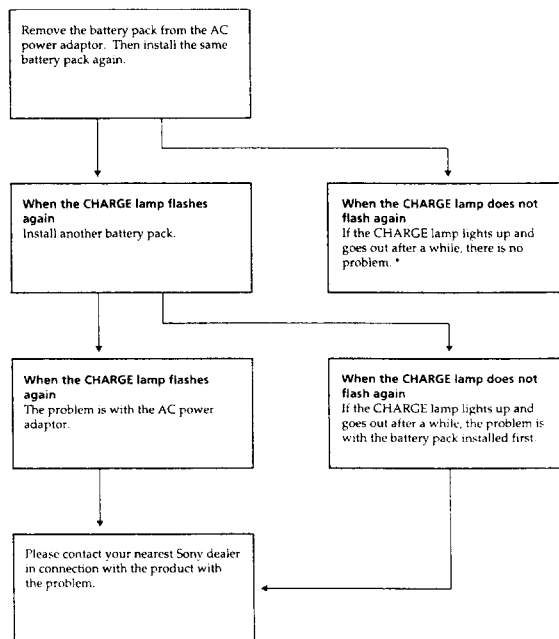
AC power adaptor

Symptom	Corrective actions
The VTR/CAMERA or CHARGE lamp does not light.	<ul style="list-style-type: none"> Disconnect the mains lead. After about 1 minute, reconnect the mains lead. (p. 7)
The CHARGE lamp flashes.	<ul style="list-style-type: none"> See the chart on the next page

Trouble check

When the CHARGE lamp flashes

Check through the following chart.



* If you use a battery pack which you have just bought or which has been left unused for a long time, the CHARGE lamp may flash at the first charging. This does not indicate a problem. Repeat again to charge with same battery pack.

Additional information / Дополнительная информация

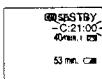
96

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Trouble check

Self-diagnosis function

In the self-diagnosis function works to prevent the camcorder from malfunctioning, a five-digit service number (combination of a letter and figures) flashes in the viewfinder or on the LCD screen. In this case, check the following table.

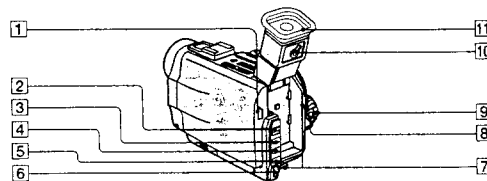


First three digits	Cause and/or Corrective Action
C21	<ul style="list-style-type: none"> Moisture condensation has occurred. <ul style="list-style-type: none"> Remove the cassette and leave the camcorder for at least 1 hour. (p. 87)
C22	<ul style="list-style-type: none"> The video heads are dirty. <ul style="list-style-type: none"> Clean the heads using the Sony DVM12CL cleaning cassette (not supplied). (p. 88)
C23	<ul style="list-style-type: none"> The camcorder does not operate when using a battery pack that is not an "InfoLITHIUM" battery pack. <ul style="list-style-type: none"> Use an "InfoLITHIUM" battery pack. (p. 7)
C31	<ul style="list-style-type: none"> To prevent the camcorder from malfunctioning, the self-diagnosis function has worked. <ul style="list-style-type: none"> Remove the cassette and insert it again, then operate the camcorder. (p. 11)
C32	<ul style="list-style-type: none"> To prevent the camcorder from operating malfunctioning, the self-diagnosis function has worked. <ul style="list-style-type: none"> Disconnect the mains lead of the AC power adaptor or remove the battery pack. After reinstalling the power source, operate the camcorder.
E61	<ul style="list-style-type: none"> To prevent the camcorder from malfunctioning, the self-diagnosis function has worked. <ul style="list-style-type: none"> When you contact your Sony dealer or local authorized Sony service facility, inform the service number with five digits. (example: E61:10)
E62	

If a difficulty persists after checking the problem a few times, contact your Sony dealer or local authorized Sony service facility.

Identifying the parts

Указатель расположения деталей



- 1 PUSH/OPEN button (p. 17)
- 2 AUTO LOCK switch (p. 43, 47)
- 3 EXPOSURE button (p. 47)
- 4 PROGRAM AE button (p. 43)
- 5 PICTURE EFFECT button (p. 40)
- 6 CONTROL dial (p. 29)
- 7 Hook for shoulder strap (p. 113)
- 8 START/STOP button (p. 12, 23)
- 9 POWER switch (p. 12, 23)
- 10 Viewfinder lens adjustment lever (p. 13)
- 11 Eyecup (p. 21)

- 1 Кнопка PUSH/OPEN (стр. 17)
- 2 Кнопка AUTO LOCK (стр. 43, 47)
- 3 Кнопка EXPOSURE (стр. 47)
- 4 Кнопка PROGRAM AE (стр. 43)
- 5 Кнопка PICTURE EFFECT (стр. 40)
- 6 Рукоятка CONTROL (стр. 29)
- 7 Ушко для плечевого ремня (стр. 113)
- 8 Кнопка START/STOP (стр. 12, 23)
- 9 Переключатель POWER (стр. 12, 23)
- 10 Рычажок подстройки окуляра (стр. 13)
- 11 Насадка окуляра (стр. 21)

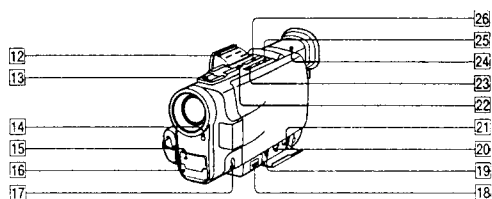
Additional information / Дополнительная информация

98

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Identifying the parts

Указатель расположения деталей



12 Tape transport buttons (p. 23)

- STOP (stop)
- ◀ REW (rewind)
- ▶ PLAY (playback)
- ▶▶ FF (fastforward)
- ⏸ PAUSE (pause)
- AUDIO DUB

13 Intelligent Accessory shoe

14 Recording lamp

15 Microphone

16 Remote sensor (p. 23) / IR emitter (p. 51)

17 Focus dial (p. 45)

18 FOCUS switch (p. 45)

19 AUDIO/VIDEO OUT jack (p. 50, 65)

20 DV OUT jack (p. 64)

21 S VIDEO OUT jack (p. 38, 50, 65)

22 LASER LINK button (p. 51)

23 FADER button (p. 34)

24 Viewfinder (p. 13)

25 BACKLIGHT button (p. 36)

26 EDIT/SEARCH button (p. 22)

12 Кнопки управления движением ленты (стр. 23)

- STOP (остановка)
- ◀ REW (перемотка назад)
- ▶ PLAY (воспроизведение)
- ▶▶ FF (перемотка вперед)
- ⏸ PAUSE (пауза)
- AUDIO DUB

13 Контактная шина для подключения периферийных устройств

14 Сигнальная лампочка записи

15 Микрофон

16 Сенсор дистанционного управления (стр. 23) / инфракрасный излучатель (стр. 51)

17 Рукоятка наводки на резкость (стр. 45)

18 Переключатель FOCUS (стр. 45)

19 Гнездо AUDIO/VIDEO OUT (стр. 50, 65)

20 Гнездо DV OUT (стр. 64)

21 Гнездо S VIDEO (стр. 38, 50, 65)

22 Кнопка LASER LINK (стр. 51)

23 Кнопка FADER (стр. 34)

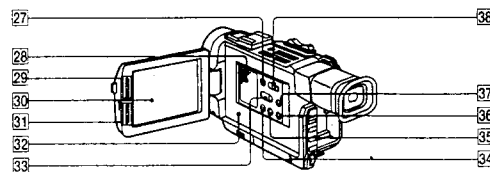
24 Видоискатель (стр. 13)

25 Кнопка BACKLIGHT (стр. 36)

26 Кнопка EDIT/SEARCH (стр. 22)

Identifying the parts

Указатель расположения деталей



27 DISPLAY button (p. 24)

28 Speaker

29 LCD BRIGHT button (p. 17, 23)

30 LCD Screen (p. 23)

31 VOLUME button (p. 17, 23)

32 RESET button (p. 96)

33 DATA CODE button (p. 63)

34 16:9 WIDE button (p. 41)

35 END SEARCH button (p. 22)

36 TITLE button (p. 68, 72)

37 MENU button (p. 24)

38 START/STOP MODE switch (p. 16)

27 Кнопка DISPLAY (стр. 24)

28 Громкоговоритель

29 Кнопка LCD BRIGHT (стр. 17, 23)

30 Жидкокристаллический экран (стр. 23)

31 Кнопка VOLUME (стр. 17, 23)

32 Кнопка RESET (стр. 96)

33 Кнопка DATA CODE (стр. 63)

34 Кнопка 16:9 WIDE (стр. 41)

35 Кнопка END SEARCH (стр. 22)

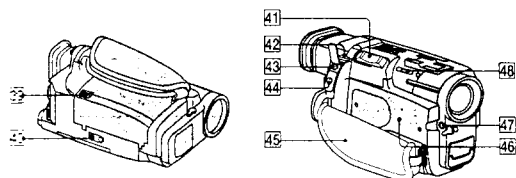
36 Кнопка TITLE (стр. 68, 72)

37 Кнопка MENU (стр. 24)

38 Переключатель START/STOP MODE (стр. 16)

Identifying the parts

Указатель расположения деталей



39 OPEN/EJECT lever (p. 11)

40 Tripod receptacle (p. 21)

Make sure that the length of the tripod screw is less than 6.5mm (1/32 inch). Otherwise, the tripod cannot attach the camcorder securely and the camcorder may damage the camcorder.

41 Zoom lever (p. 15)

42 BATT(battery) RELEASE button (p. 10)

43 LANC control jack

Connects for Local Application Control Bus system. The LANC control jack is used for controlling the tape transport of video camcorder and peripherals connected to it. This jack has the same function as the jack provided as CONTROL L or REMOTE.

44 Headphones jack (p. 24)

45 Trip strap (p. 20)

46 Cassette compartment (p. 11)

47 MIC jack (PLUG IN POWER) (p. 66)

Connect an external microphone (not provided). This jack also accepts a "plug-in-power" microphone.

48 Video compartment OPEN button (p. 23)

39 Рычажок OPEN/EJECT (стр. 11)

40 Крепление штатива (стр. 21)

Следите за тем, чтобы длина крепежного винта была менее 6,5 мм. В противном случае крепление будет ненадежным, а винт может повредить видеокамеру.

41 Рычажок управления трансфокатором (стр. 15)

42 Кнопка BATT RELEASE (отсоединение аккумуляторной батареи) (стр. 10)

43 Гнездо управления LANC

Логотип Системы управления периферийными устройствами (Local Application Control Bus System). Гнездо используется для управления движением ленты в видеоаппаратуре и работой подключенных к ней дополнительных устройств. Его функции аналогичны функциям гнезда, обозначенного CONTROL L или REMOTE.

44 Гнездо для подключения наушников (стр. 24)

45 Ручной ремень (стр. 20)

46 Кассетоприемник (стр. 11)

47 Гнездо для подключения микрофона MIC (PLUG IN POWER) (стр. 66)

К этому гнезду подключается внешний микрофон (в комплект не входит). Данное гнездо также может служить для подключения активного микрофона.

48 Рычажок OPEN для выдвигания блока управления видеопросмотром (стр. 23)

Identifying the parts

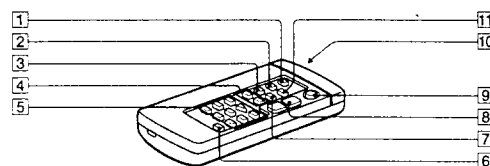
Указатель расположения деталей

Remote Commander

The buttons that have the same name on the Remote Commander as on the camcorder function identically.

Пульт дистанционного управления

Одноименные кнопки на видеокамере и пульте дистанционного управления функционируют одинаково.



1 PHOTO button (p. 37)

2 DISPLAY button (p. 24)

3 SEARCH MODE button (p. 52, 56, 58)

4 << / >> buttons (p. 52, 56, 58)

5 Tape transport buttons (p. 23)

6 AUDIO DUB button (p. 66)

7 DATA CODE button (p. 63)

8 Power zoom button (p. 15)

9 START/STOP button (p. 12)

10 Transmitter

Point toward the remote sensor to control the camcorder after turning on the camcorder.

11 ZERO SET MEMORY button (p. 62)

1 Кнопка PHOTO (стр. 37)

2 Кнопка DISPLAY (стр. 24)

3 Кнопка SEARCH MODE (стр. 52, 56, 58)

4 Кнопки << / >> (стр. 52, 56, 58)

5 Кнопки управления движением ленты (стр. 23)

6 Кнопка AUDIO DUB (стр. 66)

7 Кнопка DATA CODE (стр. 63)

8 Кнопка управления трансфокатором (стр. 15)

9 Кнопка START/STOP (стр. 12)

10 Передающее устройство

Для управления видеокамерой включите ее и направьте передающее устройство в сторону дистанционного сенсора.

11 Кнопка ZERO SET MEMORY (стр. 62)

Identifying the Parts

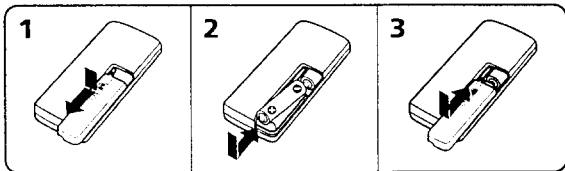
Указатель расположения деталей

To prepare the Remote Commander
To use the Remote Commander, you must insert two R6 (size AA) batteries. Use the supplied R6 (size AA) batteries.

- (1) Remove the battery cover from the Remote Commander.
- (2) Insert both of the R6 (size AA) batteries with correct polarity.
- (3) Put the battery cover back onto the Remote Commander.

Подготовка пульта дистанционного управления к работе
Прежде чем пользоваться пультом дистанционного управления, в него необходимо установить две батарейки R6 (размер AA). Батарейки R6 (размер AA) прилагаются.

- (1) Снимите крышку отделения для батареек пульта дистанционного управления.
- (2) Соблюдая полярность, установите обе батарейки R6 (размер AA).
- (3) Установите на место крышку отделения для батареек.



Note on battery life

The batteries for the Remote Commander last about 6 months under normal operation. When the batteries become weak or dead, the Remote Commander does not work.

To avoid damage from possible battery leakage

Remove the batteries when you will not use the Remote Commander for a long time.

Срок службы батареек

При нормальной интенсивности пользования пультом дистанционного управления батареек хватает примерно на 6 месяцев. Когда батарейки начинают садиться или полностью разряжаются, пульт дистанционного управления перестает работать.

Предотвращение повреждений, вызываемых протеканием батареек

Если вы в течение длительного времени не собираетесь пользоваться пультом дистанционного управления, извлеките из него батарейки.

Identifying the parts

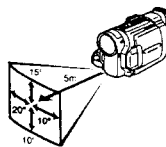
Указатель расположения деталей

Remote control direction

Aim the Remote Commander to the remote sensor.
The operative range of the Remote Commander is about 5 m (16.4 feet) indoors. Depending on the angle, Remote Commander may not activate the camcorder.

Как пользоваться пультом дистанционного управления

Пульт дистанционного управления должен быть направлен в сторону дистанционного сенсора.
Дистанционное управление в закрытом помещении обеспечивается на расстоянии до 5 метров. Его эффективность зависит от угла, под которым сигнал принимается видеокамерой.



Notes on the Remote Commander

- Keep the remote sensor away from strong light sources such as direct sunlight or illumination. Otherwise, the remote control may not be effective.
- Be sure that there is no obstacle between the remote sensor on the camcorder and the Remote Commander.
- This camcorder works in commander mode VTR 2. The commander modes (1, 2 and 3) are used to distinguish this camcorder from other Sony VCRs to avoid remote control misoperation. If you use another Sony VCR in commander mode VTR 2, we recommend you change the commander mode or cover the remote sensor of the VCR with black paper.

О пульте дистанционного управления

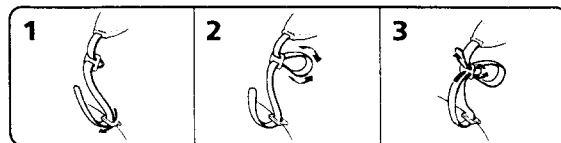
- Держите пульт дистанционного управления вдали от сильных источников света (прямые солнечные лучи, яркие лампы). В противном случае эффективность дистанционного управления может быть нарушена.
- Следите за тем, чтобы между пультом и дистанционным сенсором видеокамеры не было никаких препятствий.
- Видеокамера работает в режиме дистанционного управления VTR 2. Различные режимы дистанционного управления (1, 2 и 3) используются для того, чтобы отличать команды, предназначенные для видеокамеры, от команд управления другой видеоаппаратурой Sony, избегая тем самым сбоев в работе дистанционного управления. Если у Вас уже есть видеомagnetofон Sony, работающий в режиме VTR 2, то рекомендуем перепрограммировать его на другой режим или закрыть дистанционный сенсор видеомagnetofона черной бумагой.

Attaching the shoulder strap

Attach the supplied shoulder strap to the hooks for the shoulder strap.

Присоединение плечевого ремня

Присоедините прилагаемый плечевой ремень, используя предназначенные для него ушки.



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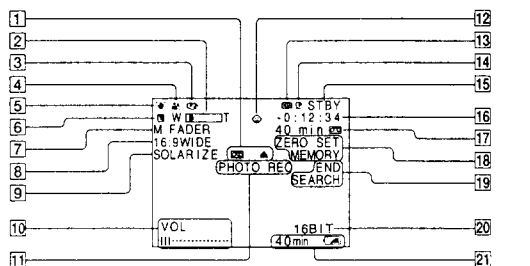
113

Identifying the parts

Указатель расположения деталей

Operation indicators

Функциональные индикаторы



- 1 Warning indicator (p. 116)
- 2 Zoom indicator (p. 15)
- 3 Manual focus/Infinity indicator (p. 45)
- 4 PROGRAM AE indicator (p. 43)
- 5 SteadyShot indicator (p. 48)
- 6 BACK LIGHT indicator (p. 36)
- 7 FADER indicator (p. 34)
- 8 16:9 WIDE indicator (p. 41)
- 9 PICTURE EFFECT indicator (p. 40)
- 10 BRT (bright) indicator (p. 17, 23) / VOL (volume) indicator (p. 23)
- 11 Photo recording indicator (p. 37)
- 12 Mirror mode indicator (p. 18)
- 13 Cassette Memory indicator (p. 4)
- 14 Recording mode indicator (p. 13)
- 15 Предупреждающий индикатор (стр. 116)
- 16 Индикатор приближения/отдаления (стр. 15)
- 17 Индикатор ручной фокусировки/наводки фокуса на бесконечность (стр. 45)
- 18 Индикатор PROGRAM AE (стр. 43)
- 19 Индикатор электронного стабилизатора кадров (стр. 48)
- 20 Индикатор BACK LIGHT (стр. 36)
- 21 Индикатор FADER (стр. 34)
- 22 Индикатор 16:9 WIDE (стр. 41)
- 23 Индикатор PICTURE EFFECT (стр. 40)
- 24 Индикатор BRT(яркости) (стр. 17, 23)/индикатор VOL(громкости) (стр. 23)
- 25 Индикатор видеофотосъемки (стр. 37)
- 26 Индикатор зеркального режима (стр. 18)
- 27 Индикатор памяти кассеты (стр. 4)
- 28 Индикатор режима съемки (стр. 13)

Identifying the parts

Указатель расположения деталей


- 15 Recording standby mode indicator (p. 13) / Tape transport mode indicator
- 16 Time code indicator (p. 14)
- 17 Remaining tape indicator (p. 14)
- 18 ZERO SET MEMORY indicator (p. 62) / Photo capture indicator (p. 37)
- 19 Search mode indicator (p. 52, 56, 58)
- 20 Audio mode indicator (p. 76)
- 21 Remaining battery indicator (p. 82) / Remaining time in minutes indicator

- 15 Индикатор режима ожидания начала съемки (стр. 13)/ индикатор движения ленты
- 16 Индикатор хронометрического кода (стр. 14)
- 17 Индикатор длины оставшейся ленты (стр. 14)
- 18 Индикатор ZERO SET MEMORY (стр. 62)/ индикатор фиксации видеофотоснимка (стр. 37)
- 19 Индикатор режима поиска (стр. 52, 56, 58)
- 20 Индикатор аудиорежима (стр. 76)
- 21 Индикатор оставшейся емкости батареи/оставшееся время работы в минутах (стр. 82)

To watch the demonstration


You can watch a brief demonstration of pictures with special effects. If the demonstration appears when you turn on the camcorder for the first time, exit the Demo mode to use your camcorder.

To enter demo mode

- (1) Eject the cassette and set the POWER switch to OFF.
- (2) While holding down , set the POWER switch to CAMERA. The demonstration starts. The demonstration stops when you insert the cassette.

Note that once you enter Demo mode, this mode is retained as long as the vanadium rechargeable battery is in place. Therefore, demonstration starts automatically 10 minutes later every time you set the POWER switch to CAMERA, and after you eject the cassette.


To exit demo mode

- (1) Set the POWER switch to OFF.
- (2) While holding down , set the POWER switch to CAMERA.


Включение демонстрации функций

Вы можете увидеть краткую демонстрацию видеозаписей, создаваемых видеокамерой. Если демонстрация начинается сразу при первом включении камеры, то для пользования камерой необходимо отключить демонстрационный режим.

Включение демонстрационного режима.

- (1) Извлеките кассету и установите переключатель POWER в положение OFF
- (2) Удерживая в нажатом положении кнопку , переведите переключатель POWER в положение CAMERA. Демонстрация начинается. Она прекращается при установке в камеру видеокассеты. Следует иметь в виду, что камера может оставаться в демонстрационном режиме до тех пор, пока из нее не извлечена ванадиевая аккумуляторная батарейка. При этом демонстрация функций автоматически включается каждый раз по прошествии 10 минут после того, как переключатель POWER был установлен в положение CAMERA, если из камеры извлечена кассета.

Отключение демонстрационного режима

- (1) Установите переключатель POWER в положение OFF.
- (2) Удерживая в нажатом положении кнопку , переведите переключатель POWER в положение CAMERA.

114

115

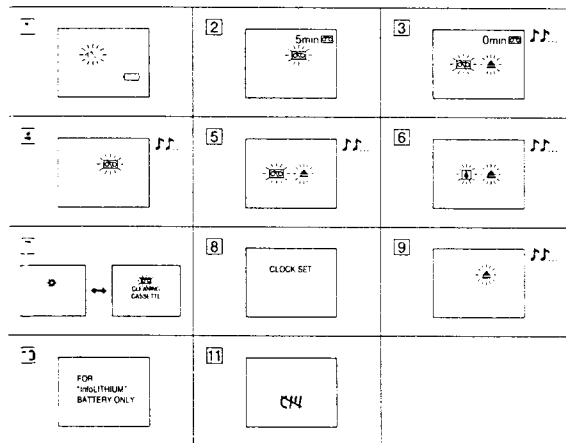
Warning indicators

Предупреждающие индикаторы

Indicators flash on the LCD screen or in the viewfinder or warning messages appear on the LCD window, check the following:
You can hear the beep sound when BEEP is set to ON in the menu system.

Если на жидкокристаллическом экране или в окне видоискателя появляются мигающие индикаторы или предупреждающие сообщения, воспользуйтесь нижеприведенными пояснениями.

Если параметр BEEP в меню параметров находится в положении ON, Вы слышите звуковой сигнал.



1 The battery is weak or dead.
slow flashing: The battery is weak.
fast flashing: The battery is dead.
Depending on conditions, the CD indicator may flash, even if there are 5 to 10 minutes remaining.

2 The tape is near the end.
slow flashing is slow.

3 The tape has run out.
slow flashing becomes rapid.

1 Батарея садится или разряжена полностью.
Медленное мигание: батарея садится.
Быстрое мигание: батарея полностью разряжена.
В зависимости от условий эксплуатации индикатор CD может начать мигать, даже когда остающегося заряда хватает еще на 5-10 минут работы.

2 Лента приближается к концу.
Индикатор мигает медленно.

3 Лента закончилась.
Мигание становится частым.

Warning indicators

Предупреждающие индикаторы

4 No tape has been inserted.

5 The tab on the tape is out (red).

6 Moisture condensation has occurred. (p. 87)

7 The video heads may be contaminated. (p. 88)

8 The clock is not set.

When this message appears though you set the date and time, the vanadium-lithium battery is discharged. Charge the vanadium-lithium battery. (p. 80)

9 Some other trouble has occurred.

Disconnect the power source and contact your Sony dealer or local authorized facility.

10 The battery is not the "InfoLITHIUM" type.

11 The tape has no cassette memory. (p. 4)

4 В видеокамере нет кассеты.

5 Защитная задвижка на кассете сдвинута (видна красная пластинка)

6 Произошла конденсация влаги (стр. 87)

7 Возможно, загрязнены видеоголовки (стр. 88).

8 Не установлено время на часах.

Если данное сообщение не исчезает даже после установки Вами даты и времени, это значит, что разряжена ванадиево-литиевая батарейка. Зарядите ванадиево-литиевую батарейку (стр. 80)

9 Прочие неполадки.

Отключите питание и свяжитесь с ближайшим дилером Sony или ближайшей специализированной мастерской.

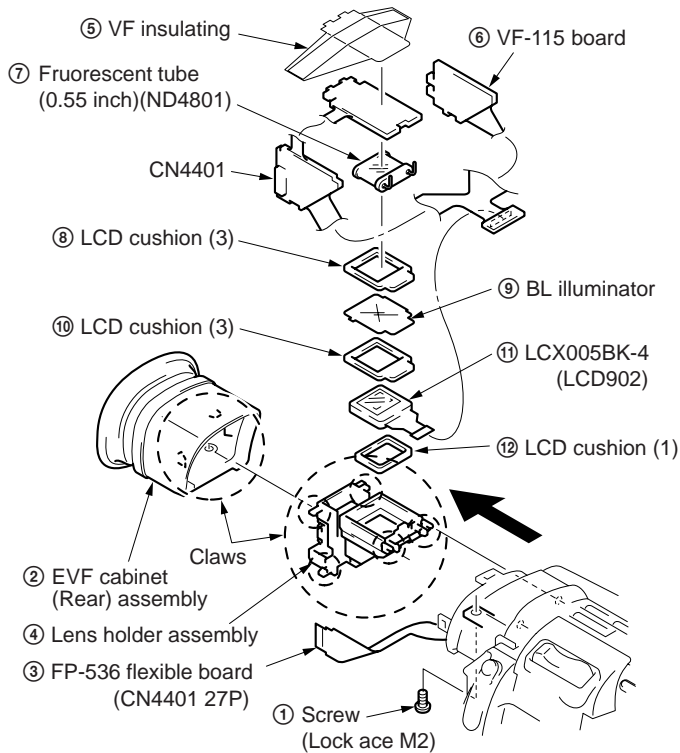
10 Установлена батарея, не относящаяся к типу "InfoLITHIUM".

11 Кассета не имеет электронной памяти (стр. 4)

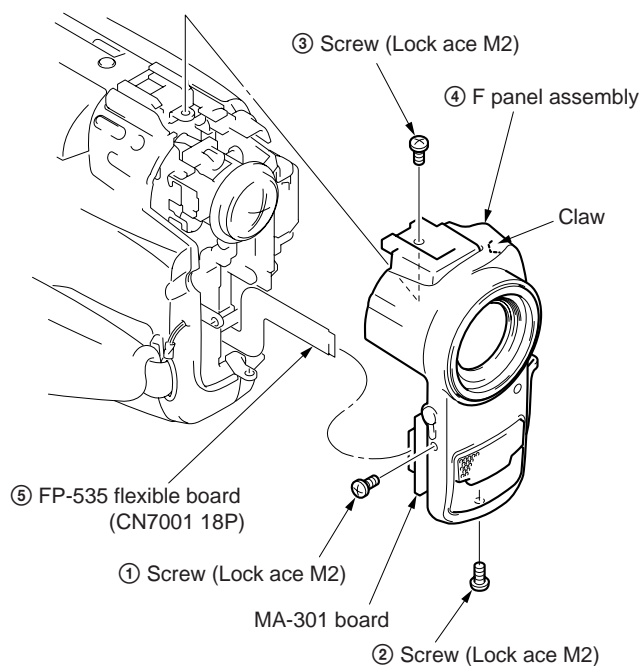
Additional Information / Дополнительная информация

SECTION 2 DISASSEMBLY

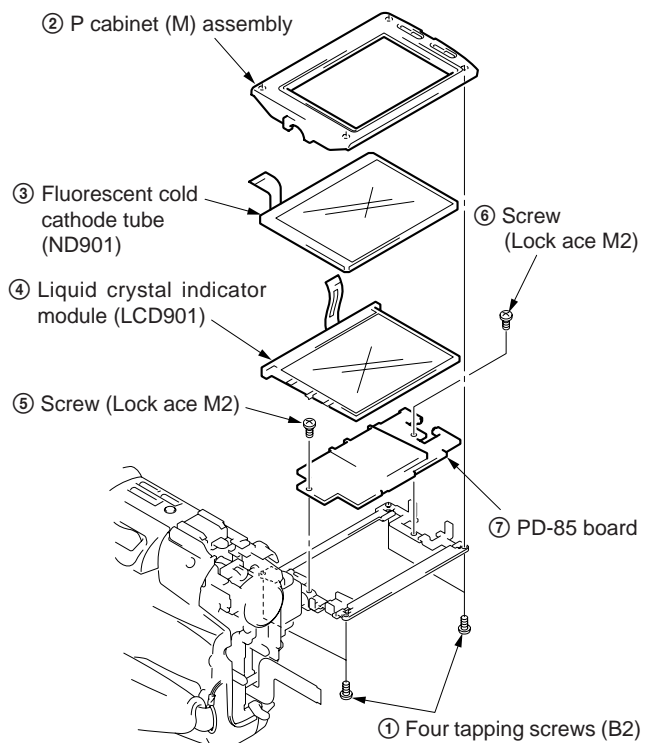
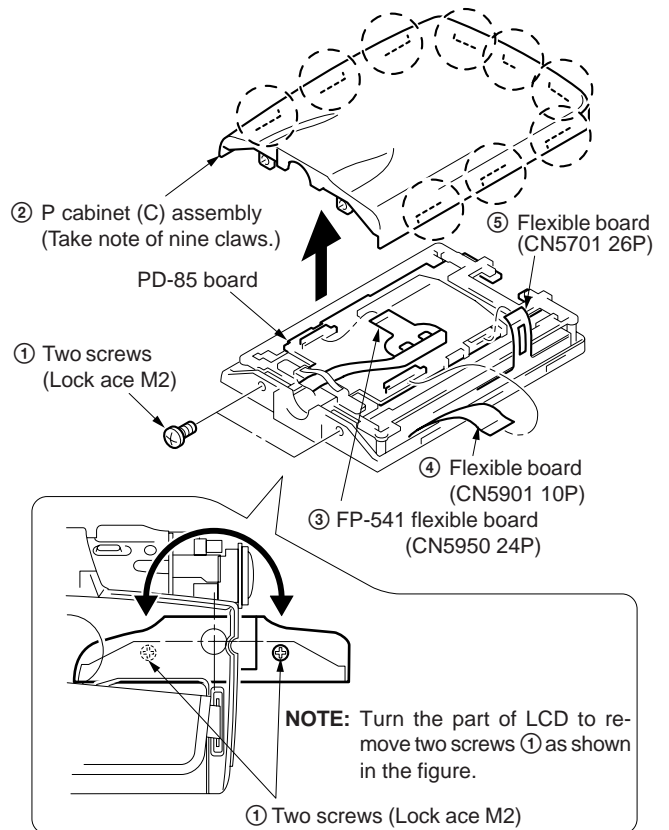
2-1. REMOVAL OF VF-115 BOARD



2-2. REMOVAL OF F PANEL ASSEMBLY

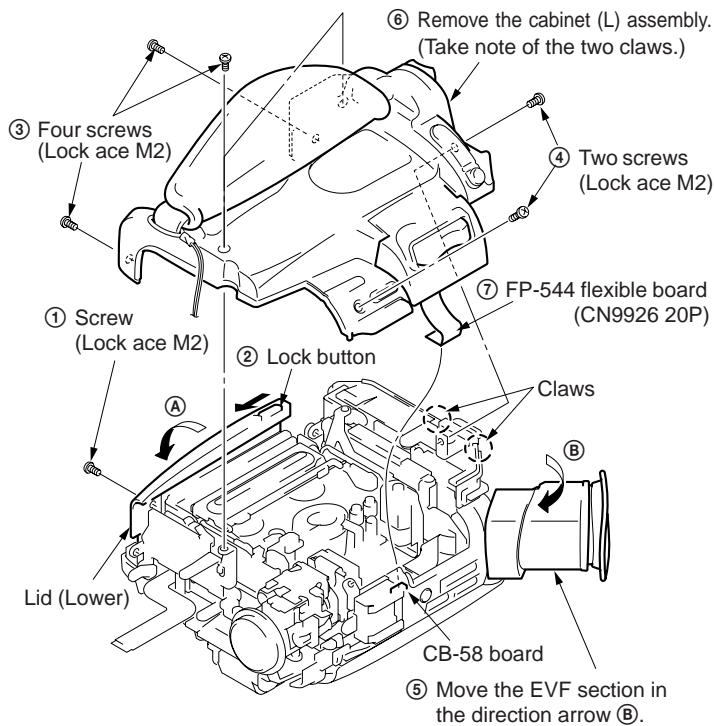


2-3. REMOVAL OF PD-85 BOARD

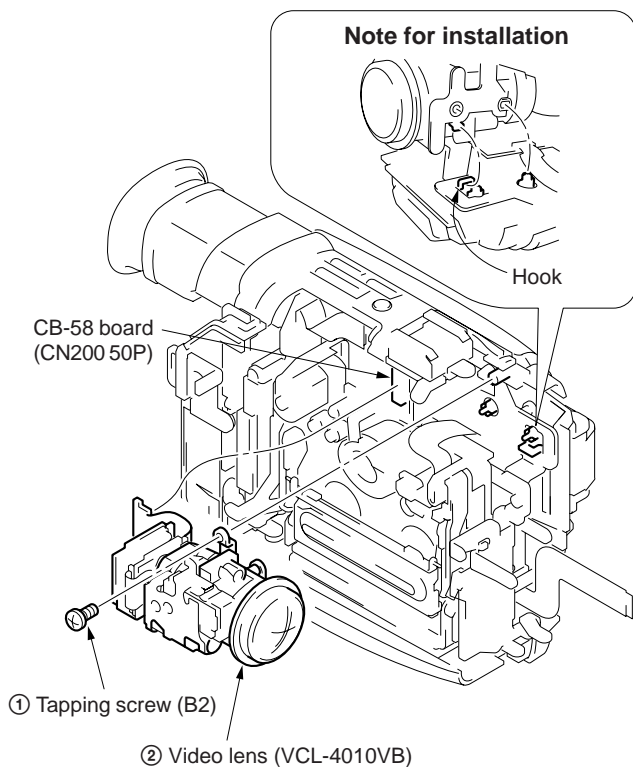


2-4. REMOVAL OF CABINET (L) ASSEMBLY

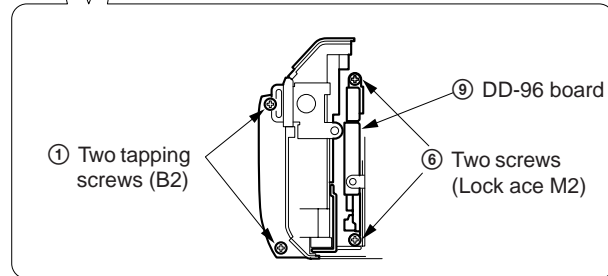
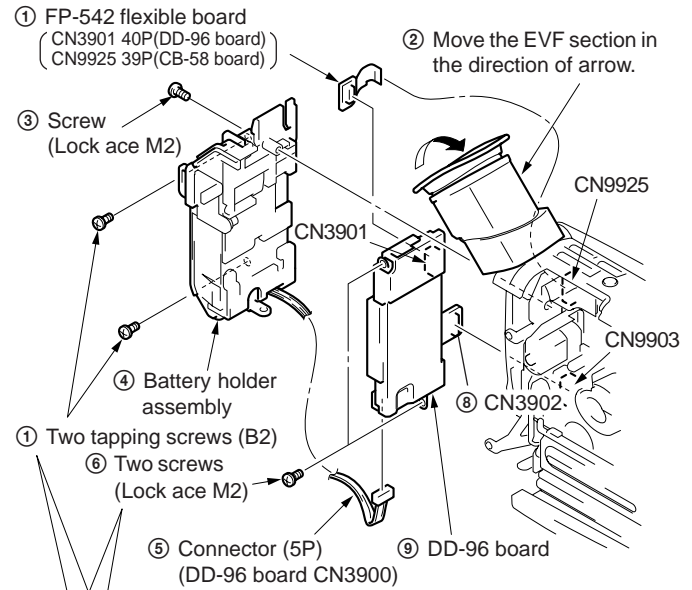
- ② Slide the lock button to open the lid (Lower) in the direction of arrow (A).



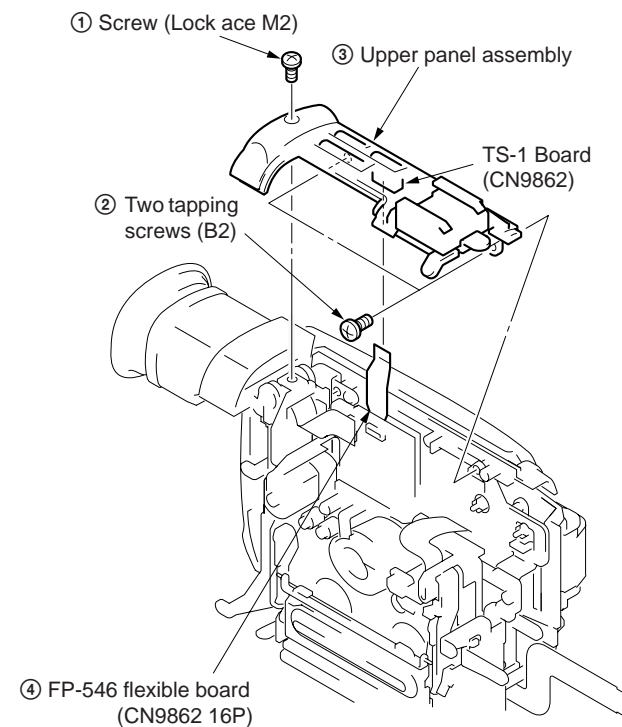
2-5. REMOVAL OF LENS ASSEMBLY



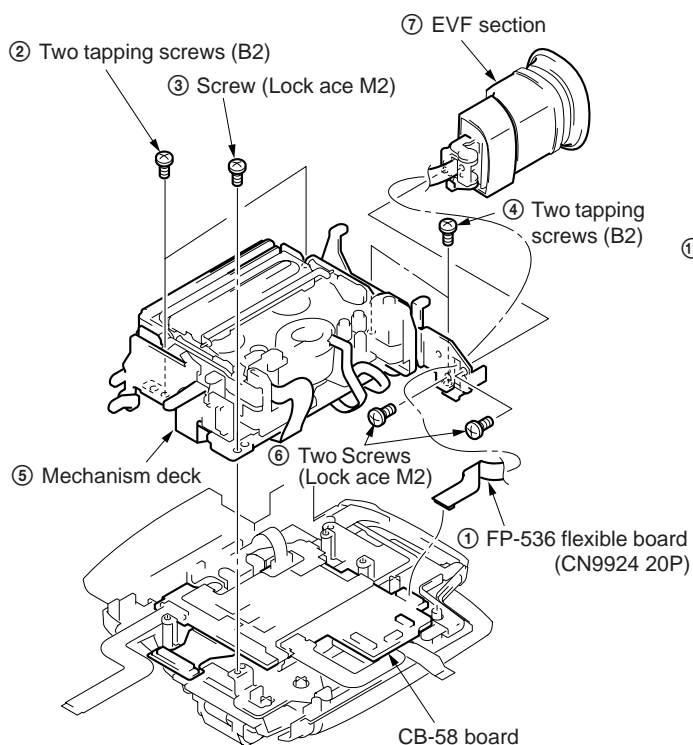
2-6. REMOVAL OF BATTERY HOLDER AND DD-96 BOARD



2-7. REMOVAL OF UPPER PANEL ASSEMBLY

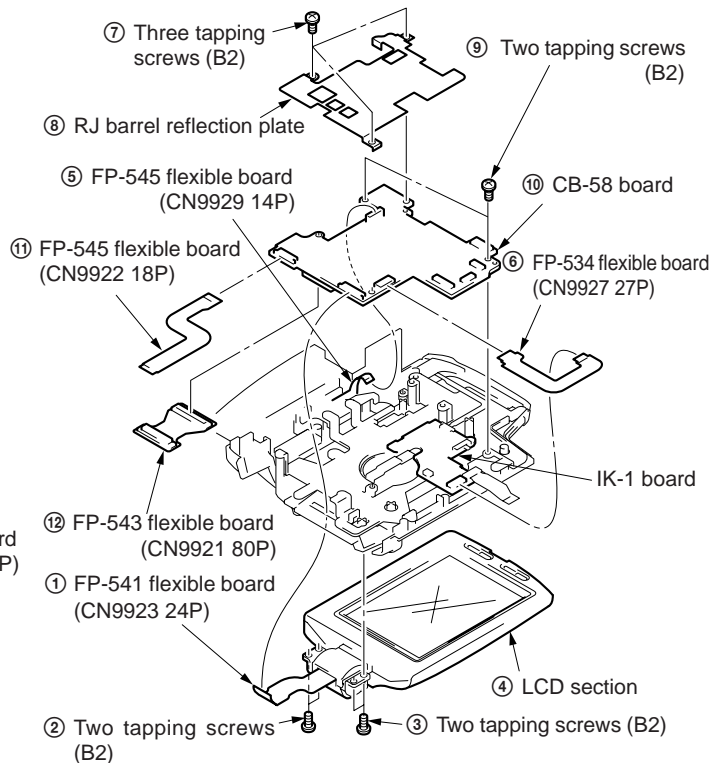


2-8. REMOVAL OF MECHANISM DECK AND EVF SECTION



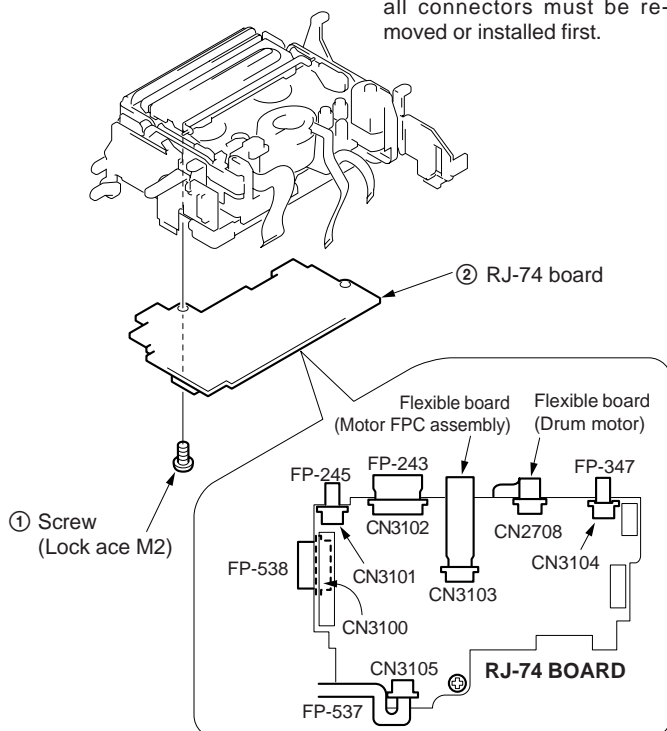
2-10. REMOVAL OF LCD SECTION AND CB-58 BOARD

NOTE: When installing, install ⑥ FP-534 to the IK-1 board first.

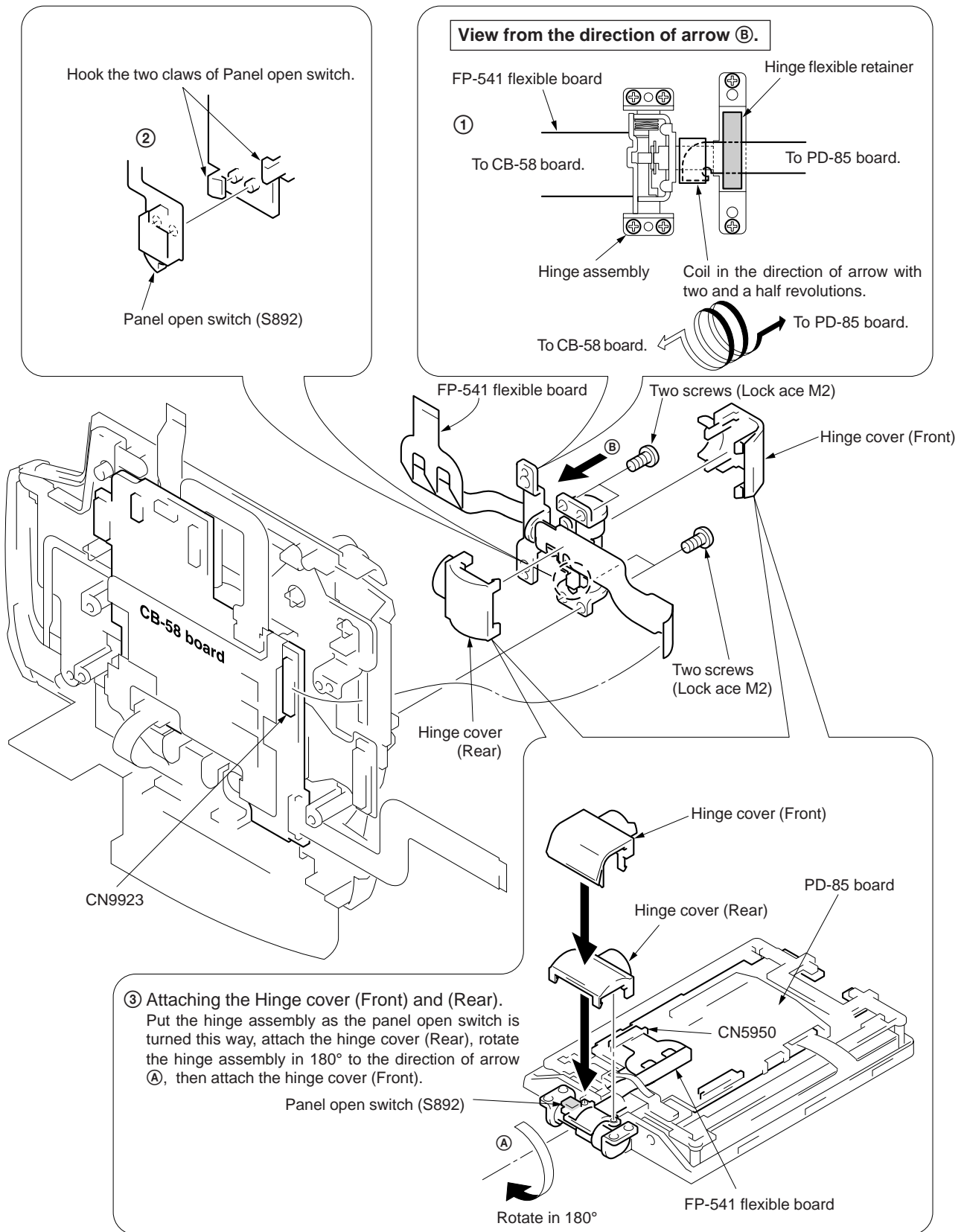


2-9. REMOVAL OF RJ-74 BOARD

NOTE: When removing and installing, all connectors must be removed or installed first.

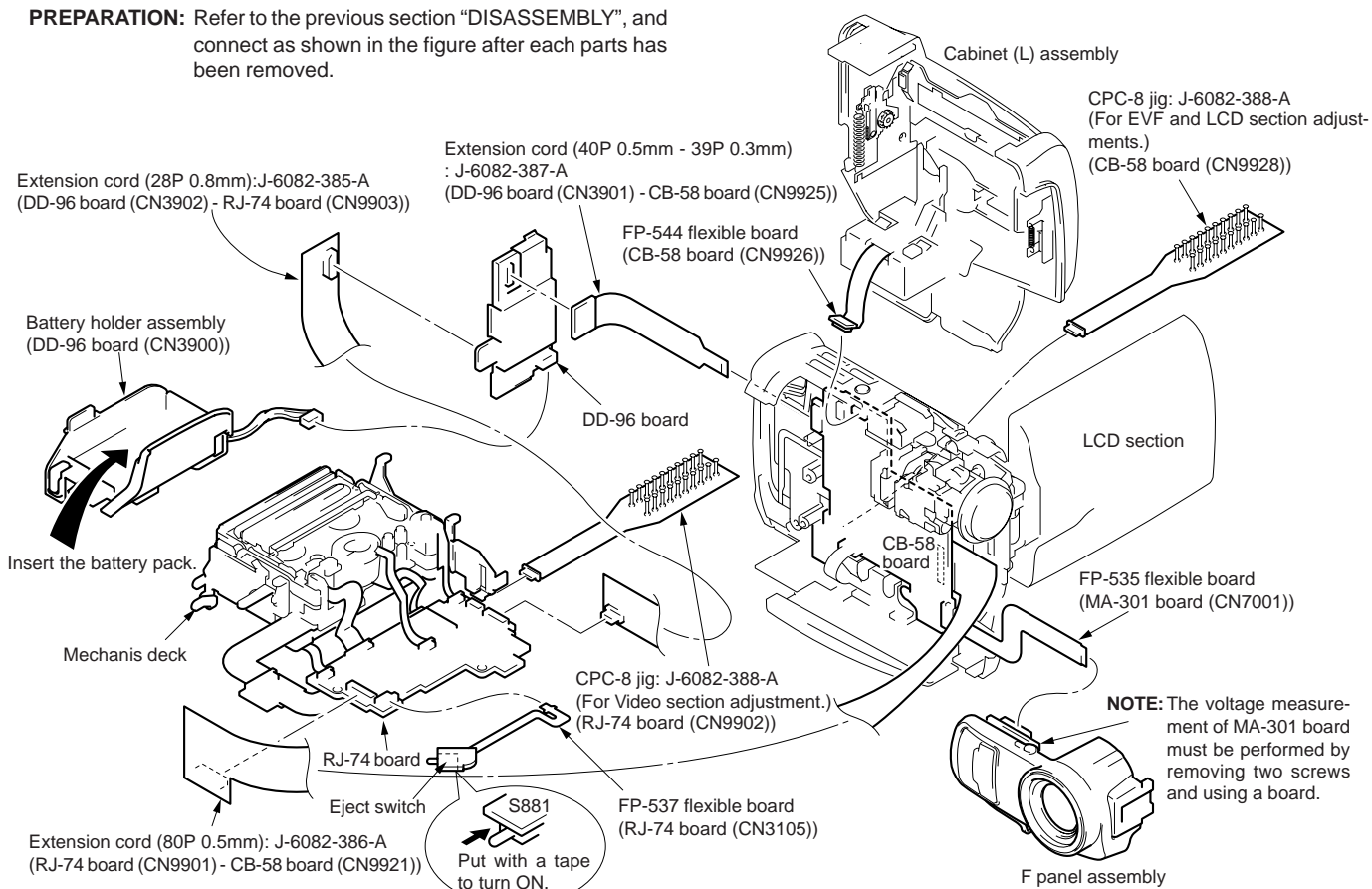


2-11. ATTACH THE FP-541 FLEXIBLE BOARD OF HINGE ASSEMBLY



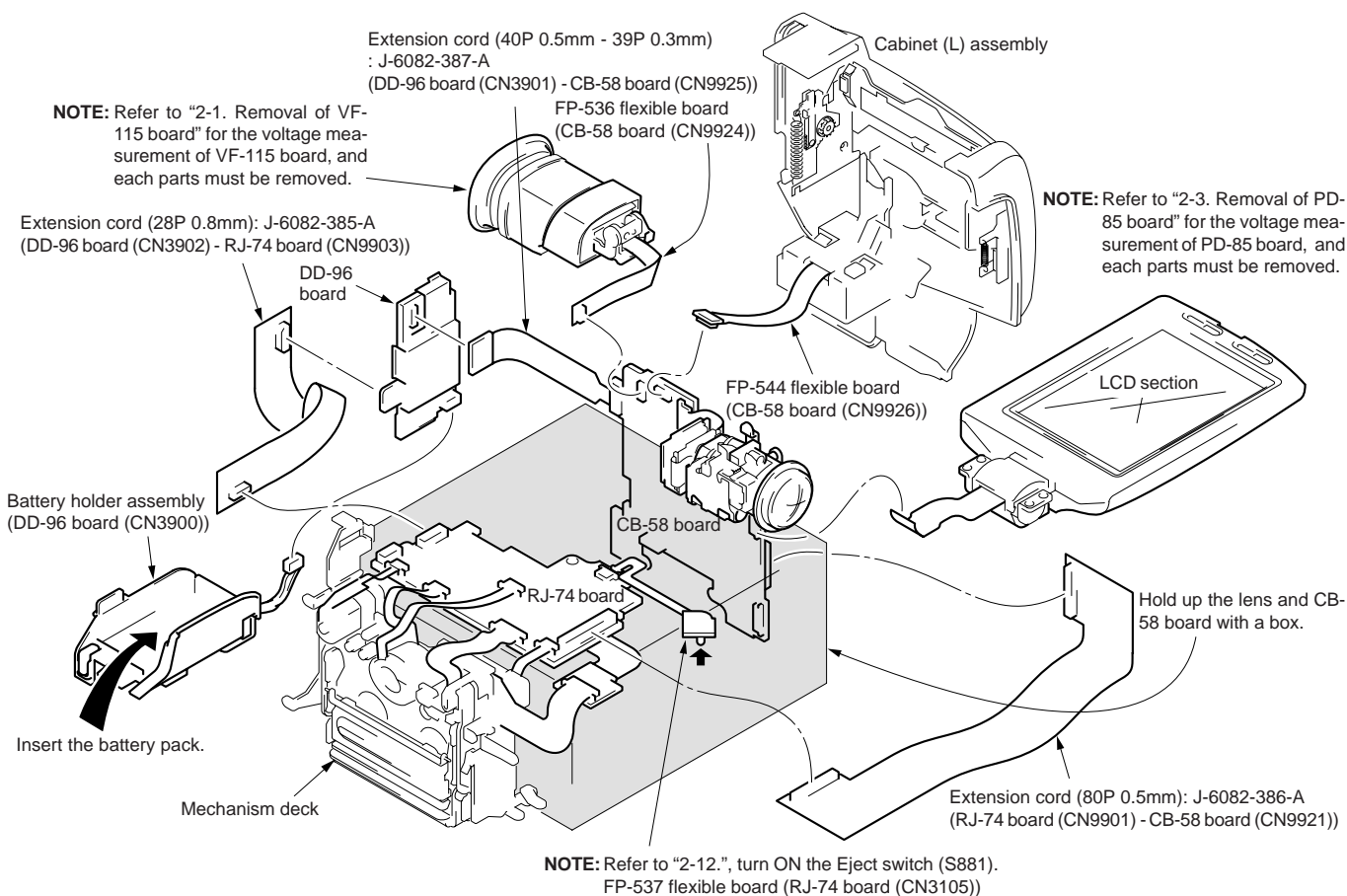
2-12. SERVICE POSITION (ELECTRICAL ADJUSTMENT OR MEASURING VOLTAGE-1)

PREPARATION: Refer to the previous section "DISASSEMBLY", and connect as shown in the figure after each parts has been removed.

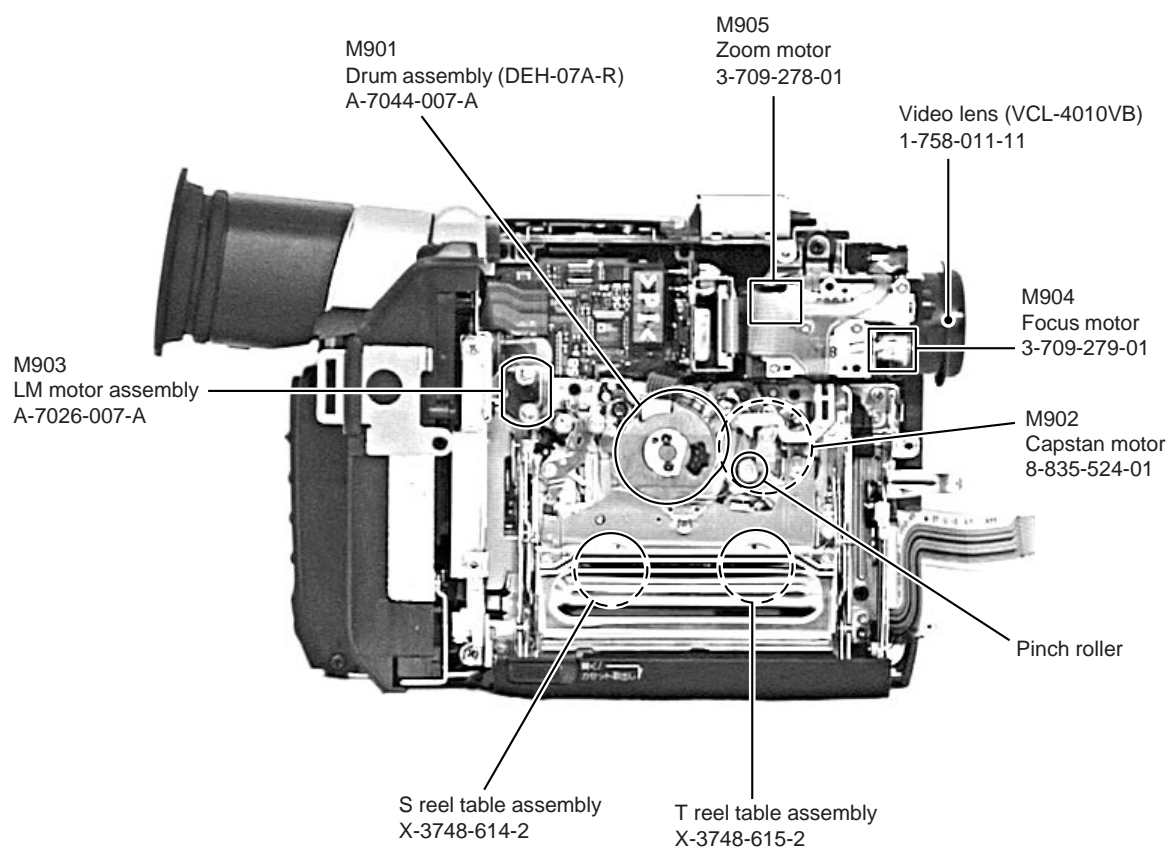


2-13. SERVICE POSITION (MEASURING VOLTAGE-2)

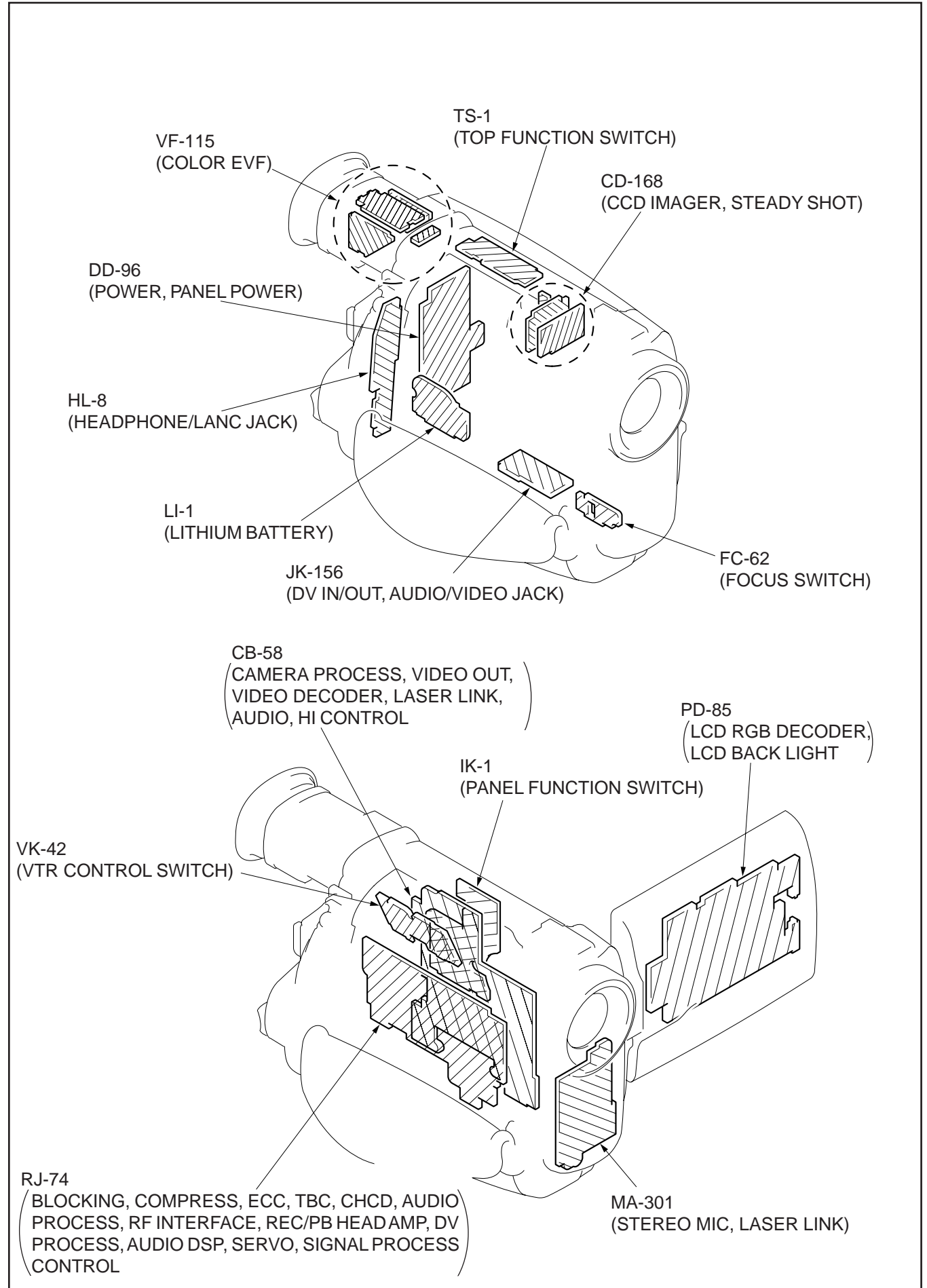
PREPARATION: Refer to the previous section "DISASSEMBLY", and connect as shown in the figure after each parts has been removed.



2-14. INTERNAL VIEW

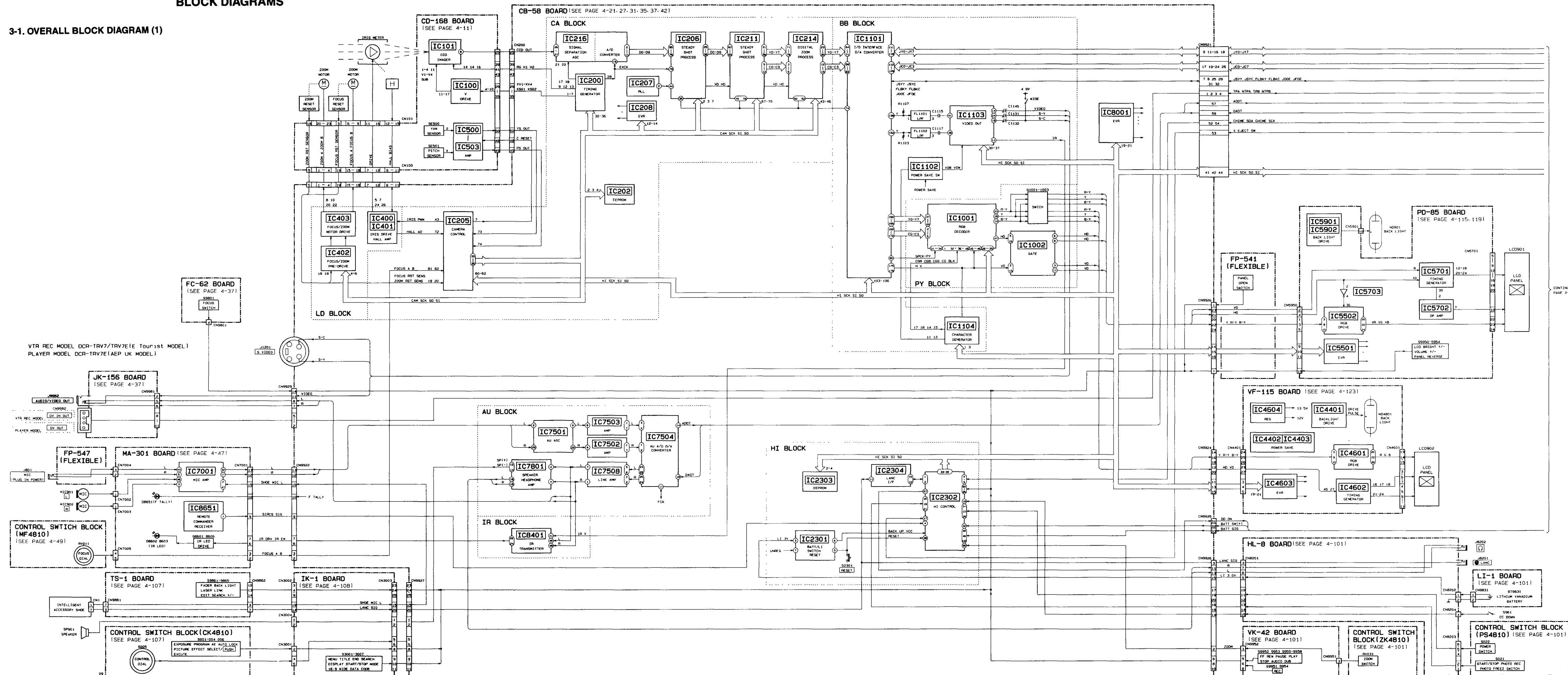


2-15. BOARD LOCATION



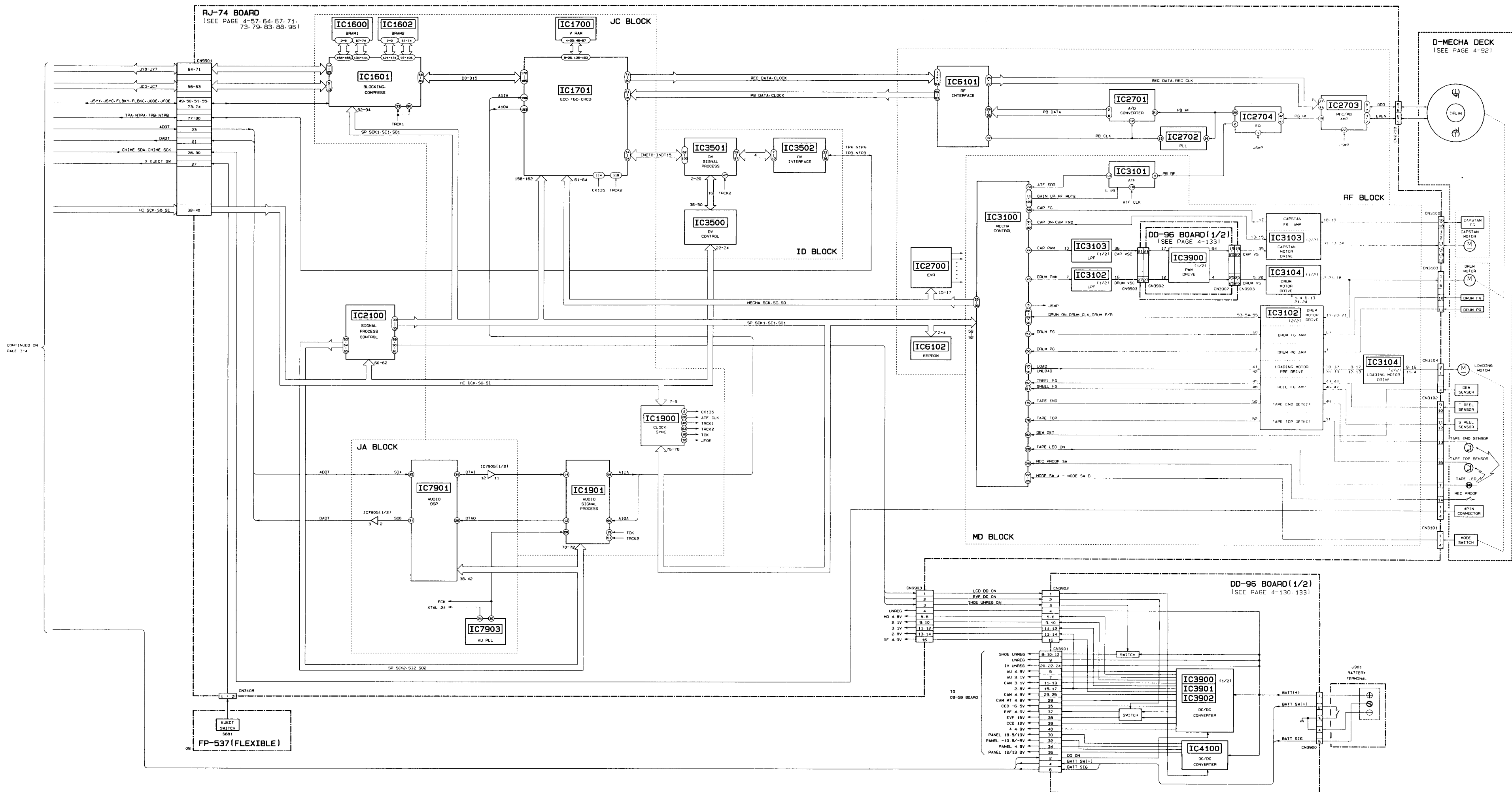
SECTION 3 BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM (1)

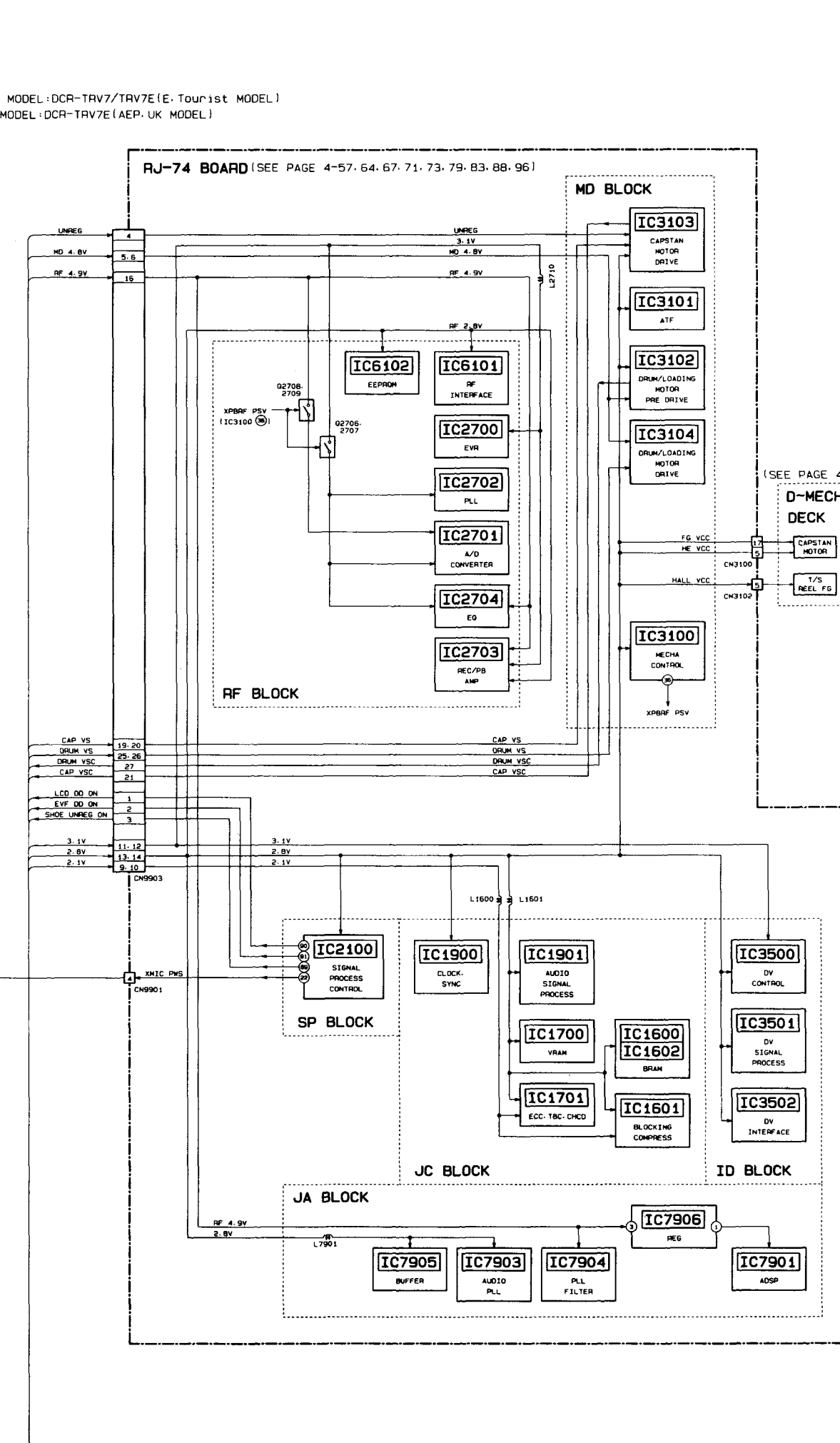
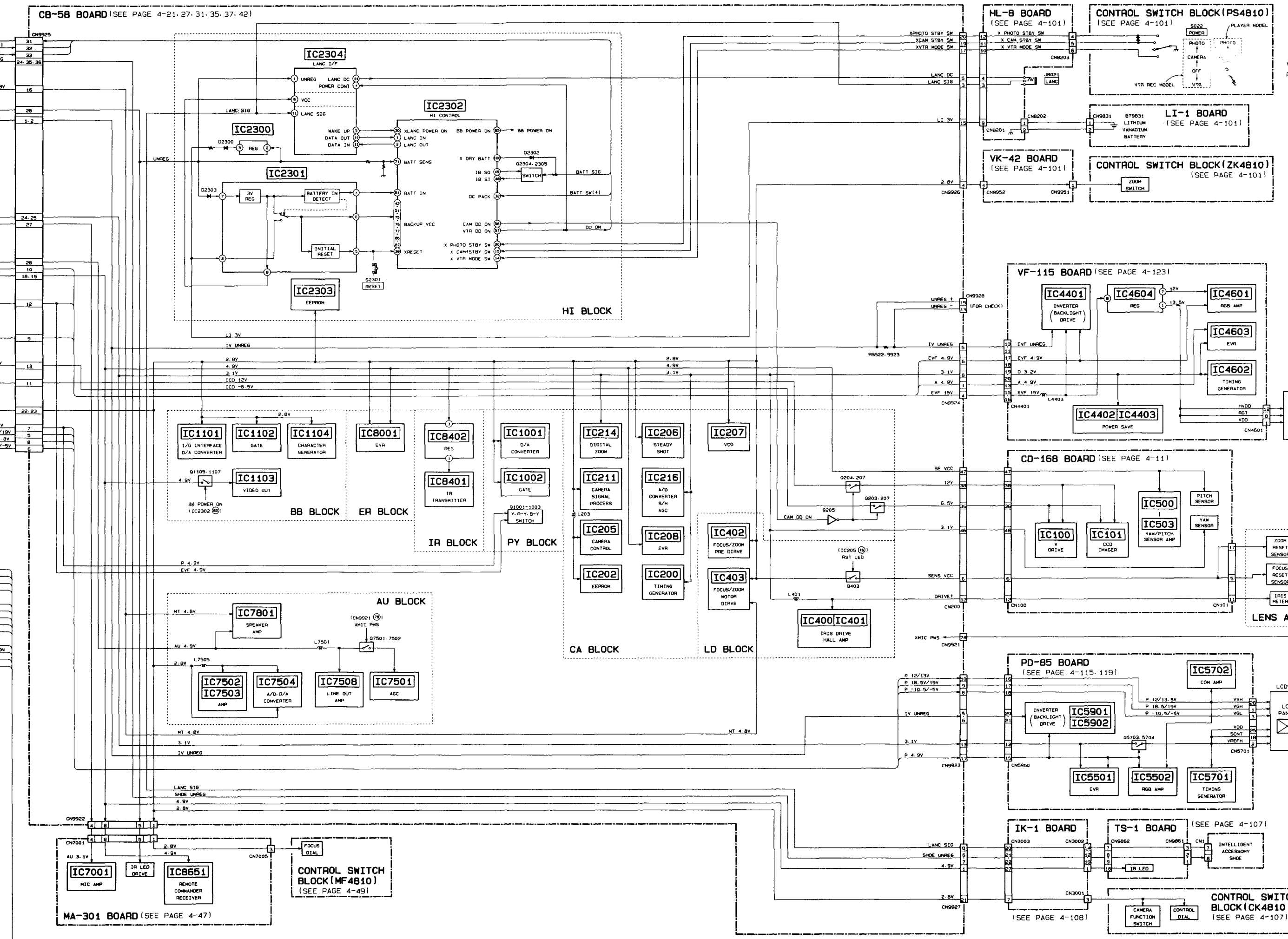
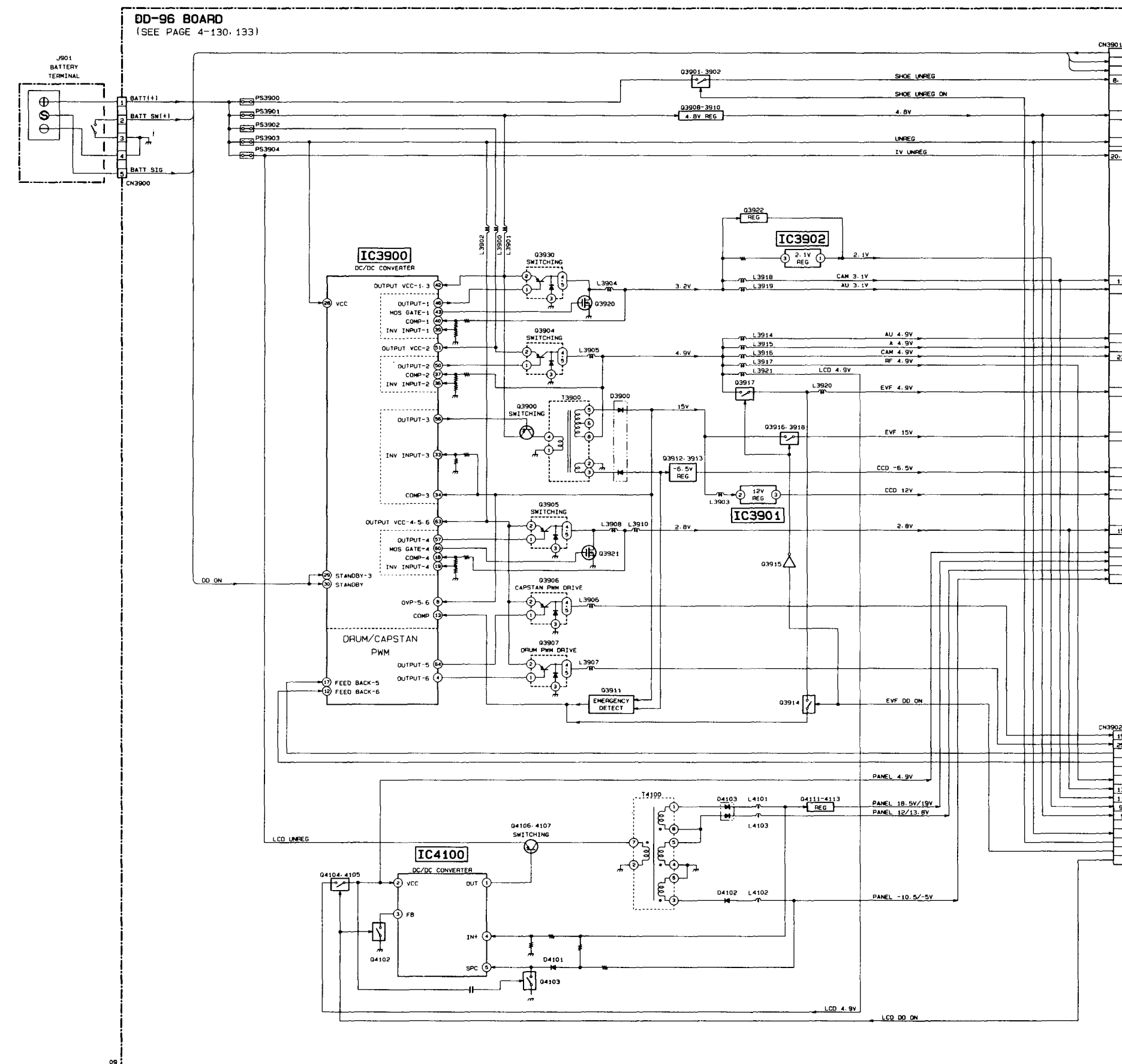


CONTINUED ON
PAGE 3-6

3-2. OVERALL BLOCK DIAGRAM (2)

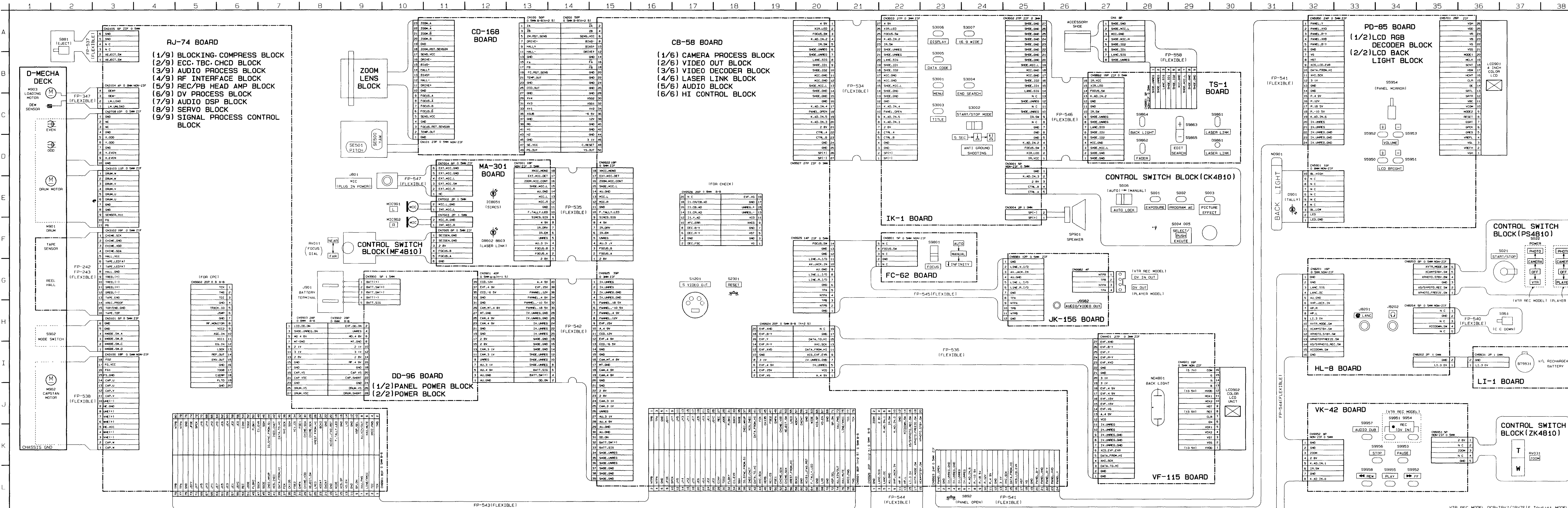


3-3. POWER BLOCK DIAGRAM



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS


4-1. FRAME SCHEMATIC DIAGRAM








4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

- **For printed wiring boards.**

-  Pattern from the side which enable seeing
(The other layer's patterns are not indicated)
- Circled numbers refer to waveforms
- ○ Through hole is omitted

- **For schematic diagrams.**

- Caution when replacing chip parts
New parts must be attached after removal of chip
Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat
- All resistors are in ohms, 1/16W unless otherwise noted
k Ω 1000 Ω , M Ω 1000k Ω
- All capacitors are in μ F unless otherwise noted pF μ F
50 V or less are not indicated except for electrolytics and tantalums
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted
- The constant such as resistor, capacitors and etc shown with XX means not used
-  panel designation
-  internal component
-  B+ Line *
-  B- Line *
-  IN/OUT direction of (+, -) B LINE *
- Circled numbers refer to waveforms *

The components identified by mark Δ or dotted line with mark Δ are critical for safety
Replace only with part number specified

Les composants identifiés par une marque Δ sont critiques pour la sécurité
Ne les remplacer que par une pièce portant le numéro spécifié

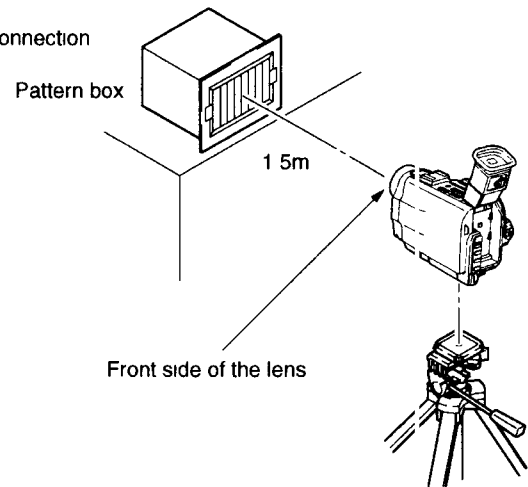
When indicating parts by reference number, please include the board name

- * indicated by the color red

- **Measuring conditions voltage value and waveform (CAMERA REC block)**

- The object is color bar chart of pattern box *
- Voltages and dc between ground and measurement points
Readings are taken with a digital multimeter (DC 10M Ω) *
- Voltages variations may be noted due to normal production tolerances *

1 Connection



2 Adjust the distance so that the output waveform of Fig a and the Fig b can be obtain

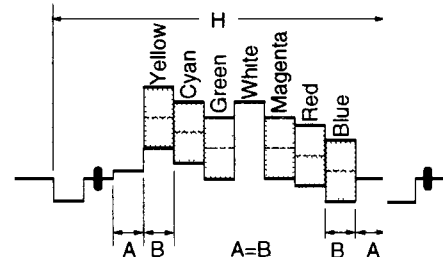


Fig a (Video output terminal output waveform)

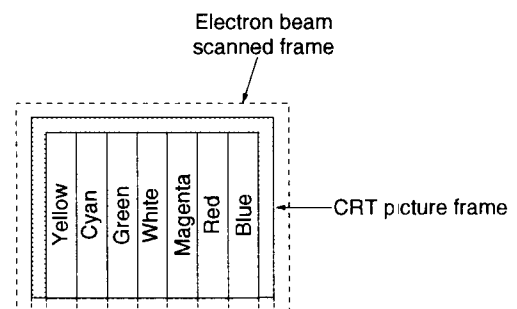


Fig b (Picture on monitor TV)

(PB mode)

- PB mode
DCR-TRV7
Measure the SW/OL standard tape (XH2-3) in the playback mode
(Used tester DC 10m Ω) *

DCR-TRV7E

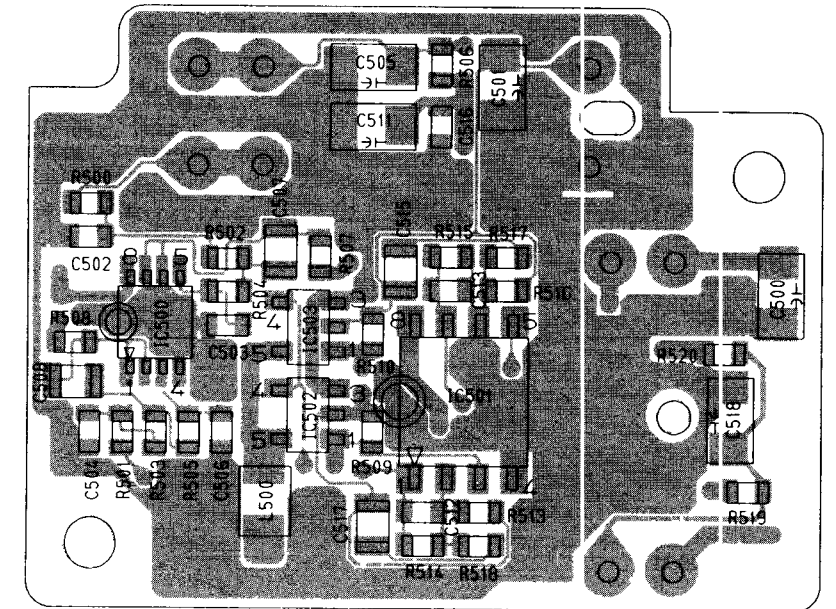
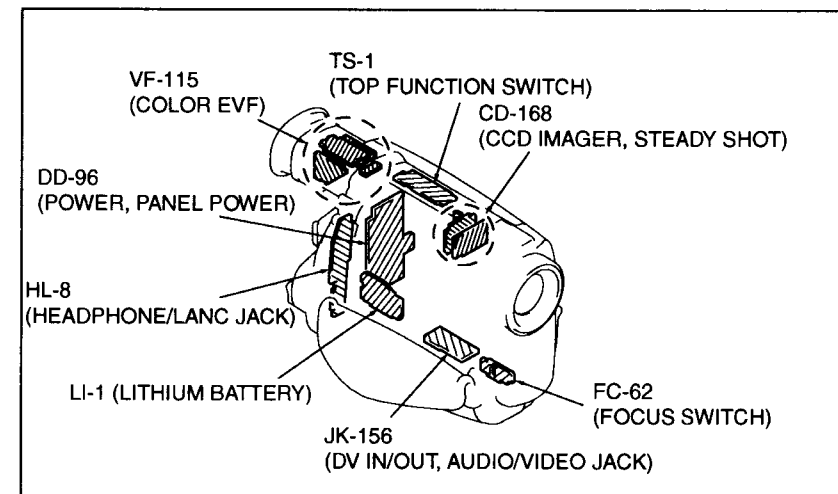
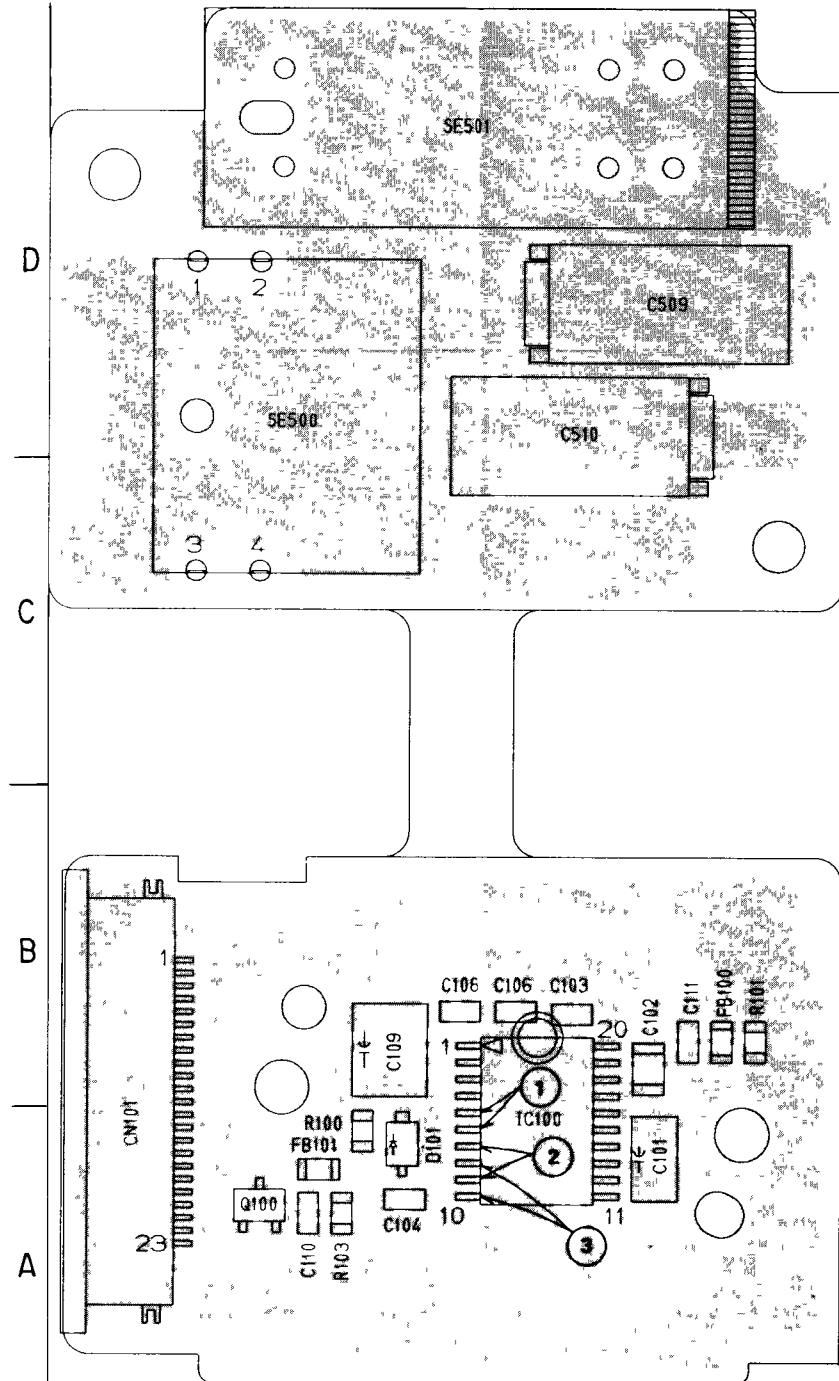
Measure the part of sampling frequency 32 kHz of SW/OL standard tape (XH2-3) in the playback mode (Used tester DC 10m Ω) *

- Voltage variations may be noted due to normal production toleranced *

– Ref No CD-168 BOARD 1,000 series –

CD 168 BOARD

C101	A2
C102	B2
C103	B3
C104	A2
C106	B2
C108	B2
C109	B2
C110	A1
C111	B2
C500	D-10
C501	D9
C502	D8
C503	D-8
C504	D-8
C505	D9
C506	D9
C507	D8
C508	D8
C509	D2
C510	D2
C511	D9
C512	C9
C513	D9
C515	D9
C516	D9
C517	C9
C518	D10
CN100	A-6
CN101	A1
D101	A2
FB100	B3
FB101	A1
IC100	A2
IC101	A9
IC500	D9
IC501	D8
IC502	D8
IC503	D8
L500	C8
Q100	A-1
R100	A1
R101	B3
R103	A1
R500	D8
R501	D8
R502	D8
R504	D8
R505	D8
R506	D9
R507	D9
R508	D8
R509	D9
R510	D9
R513	C9
R514	C-9
R515	D-9
R516	D9
R517	D9
R518	C9
R519	C10
R520	D10
SE500	D1
SE501	D2



A diagram of a rectangular area, possibly a field or a map, with several numbered points and arrows. The points are labeled 4, 5, 6, 7, 8, 9, 10, and 11. Arrows indicate a path or direction of movement between these points. The diagram is surrounded by various symbols, including circles, squares, and triangles, which may represent different types of terrain or obstacles. The text 'T-665-507-' is visible in the bottom right corner.

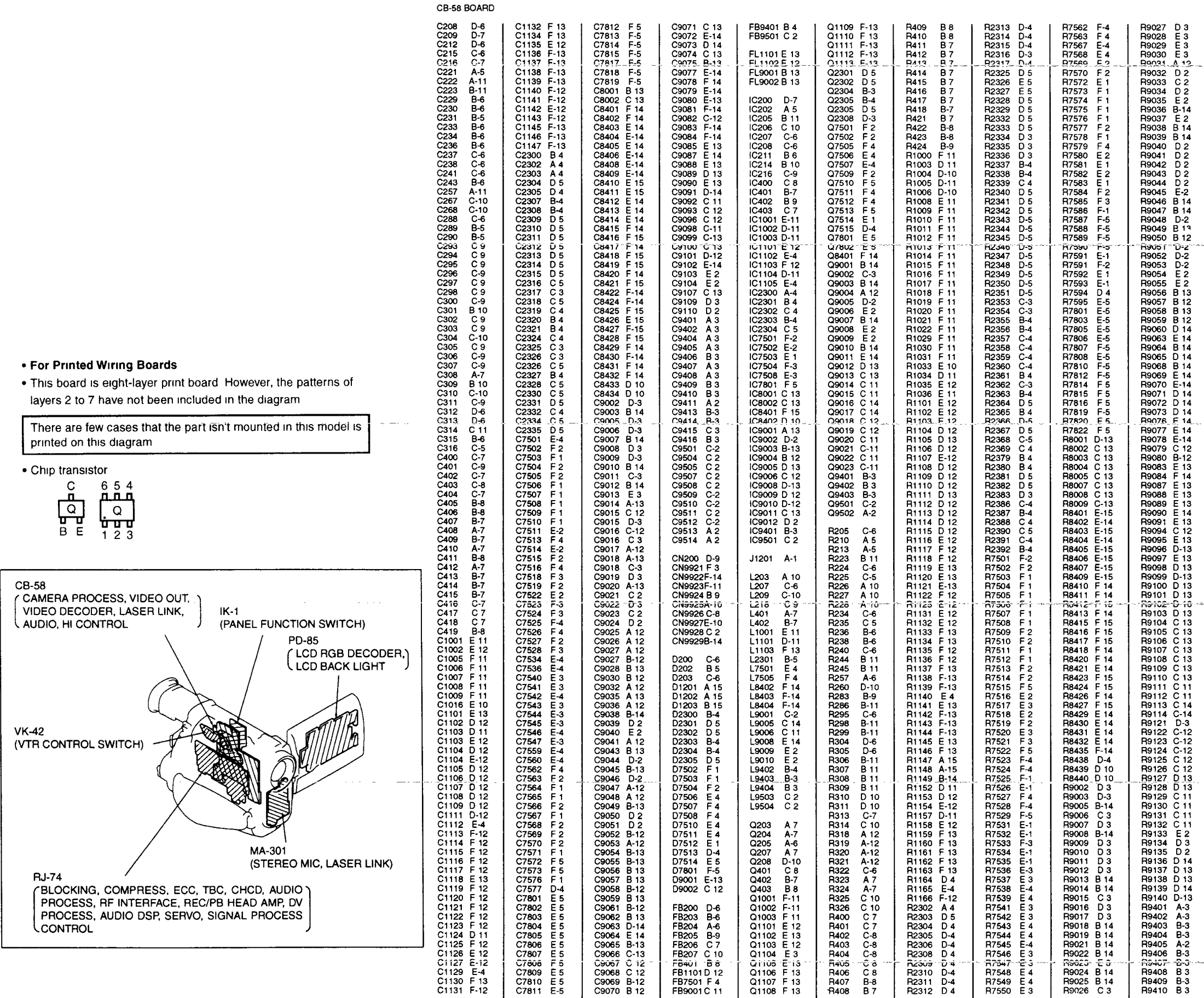
- This board is six-layer print board. However, the patterns of layers 2 to 5 have not been included in the diagram

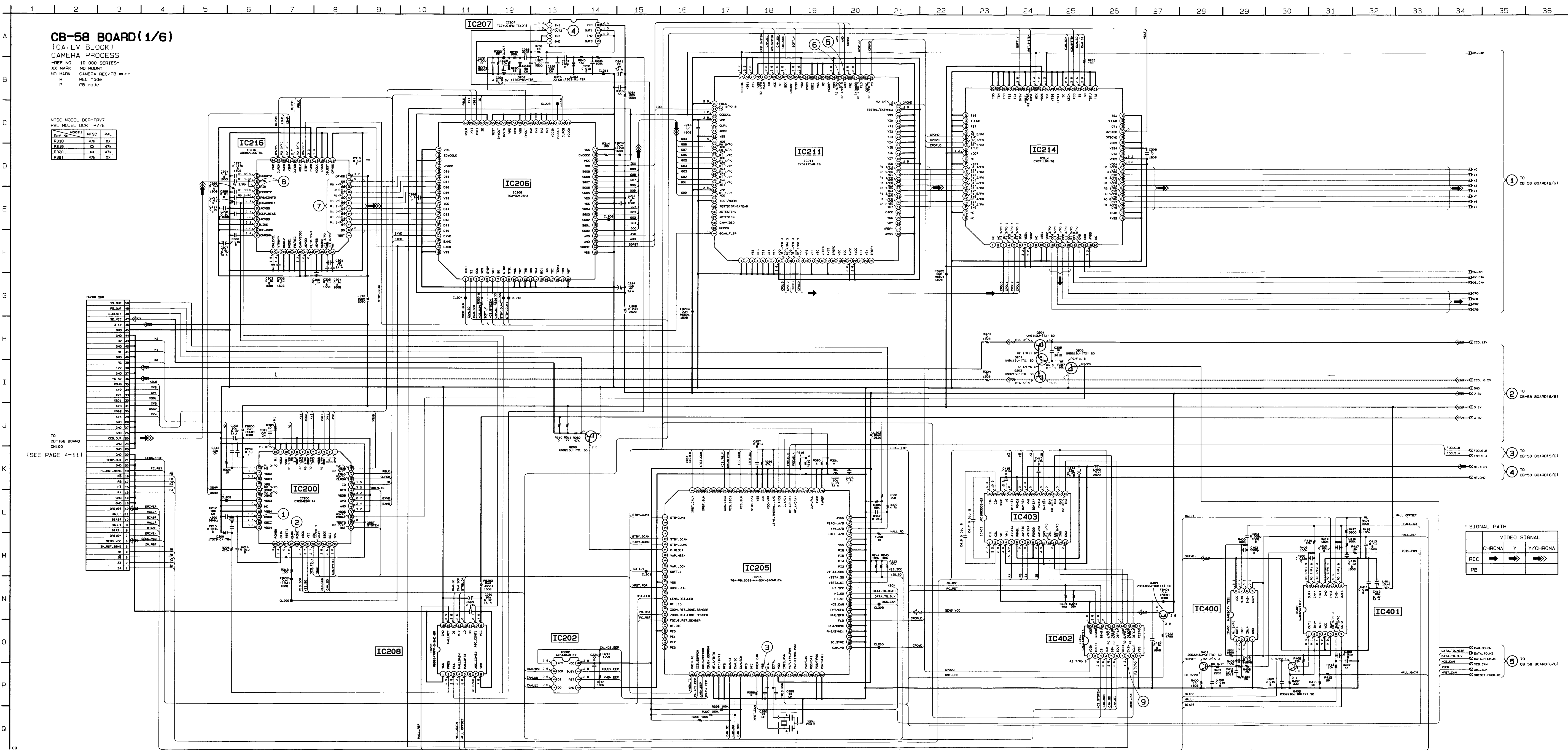
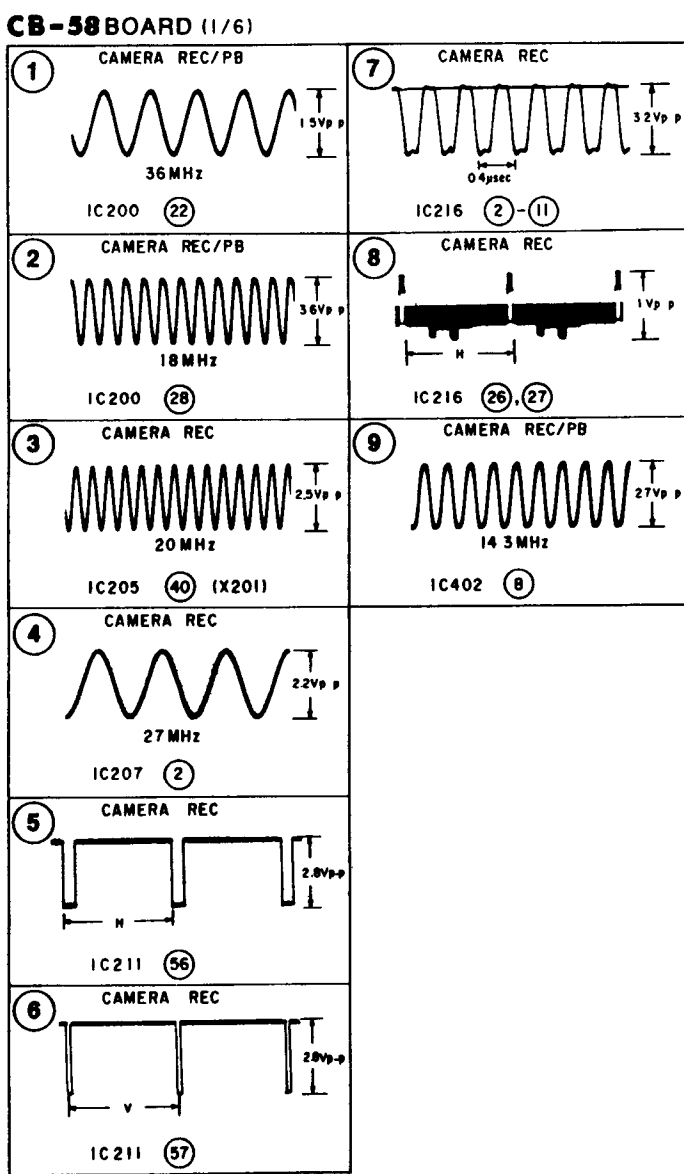
A diagram of a bridge circuit. A central node labeled 'Q' is connected to three other nodes: 'C' above it, 'B' to its left, and 'E' to its right. The connections are represented by lines forming a bridge structure.

- The CCD imager is not mounted for the already mounted CD-168 board supplied as the repair parts
When replacing the CD-168 board, remove the CCD imager from the old board and install on the new board
- Perform all adjustments of the camera block when the CCD imager has been replaced
- Handle the CCD imager with attention such as MOS IC as it may be broken by static electricity in the structure
Also, prevent the receiving light section from dust attached and strong light

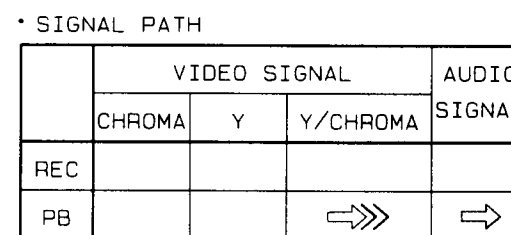
CCD IMAGER, STEADY SHOT

CD-168

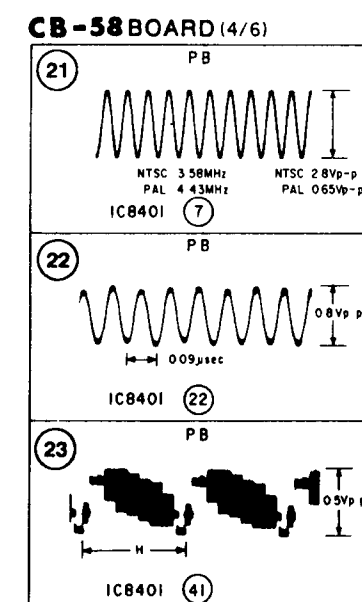




4-35



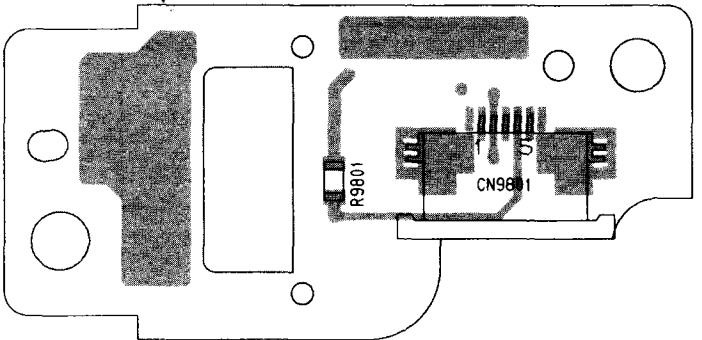
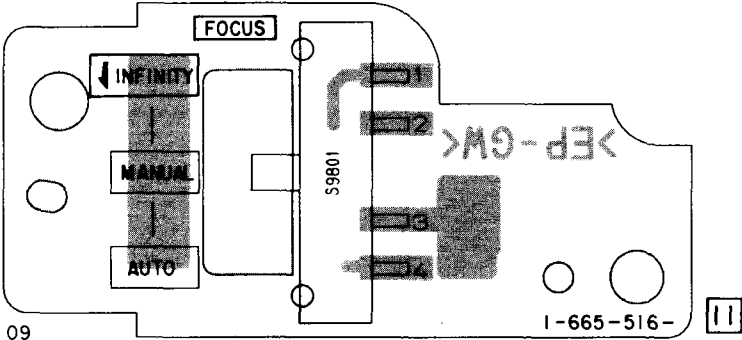
4-36



• Refer to page 4-17 for Printed Wiring Board.

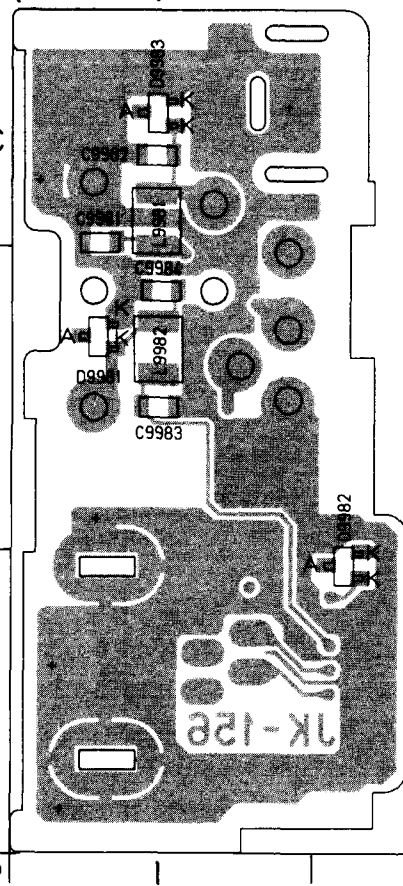
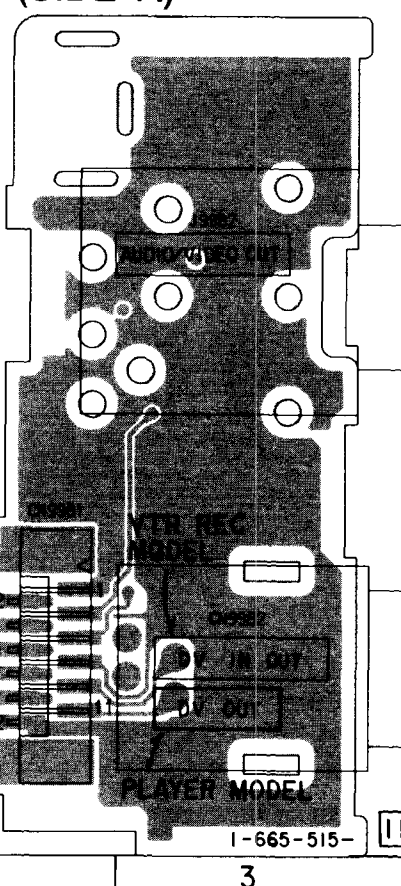
FC-62 (FOCUS SWITCH), JK-156 (DV IN/OUT, AUDIO/VIDEO JACK) PRINTED WIRING BOARD

- Ref No. FC-62 BOARD: 40,000 series, Ref No. JK-156 BOARD: 30,000 series -

FC-62 BOARD (SIDE B)**FC-62 BOARD (SIDE A)**

• For Printed Wiring Boards.

There are few cases that the part isn't mounted in this model is printed on this diagram.

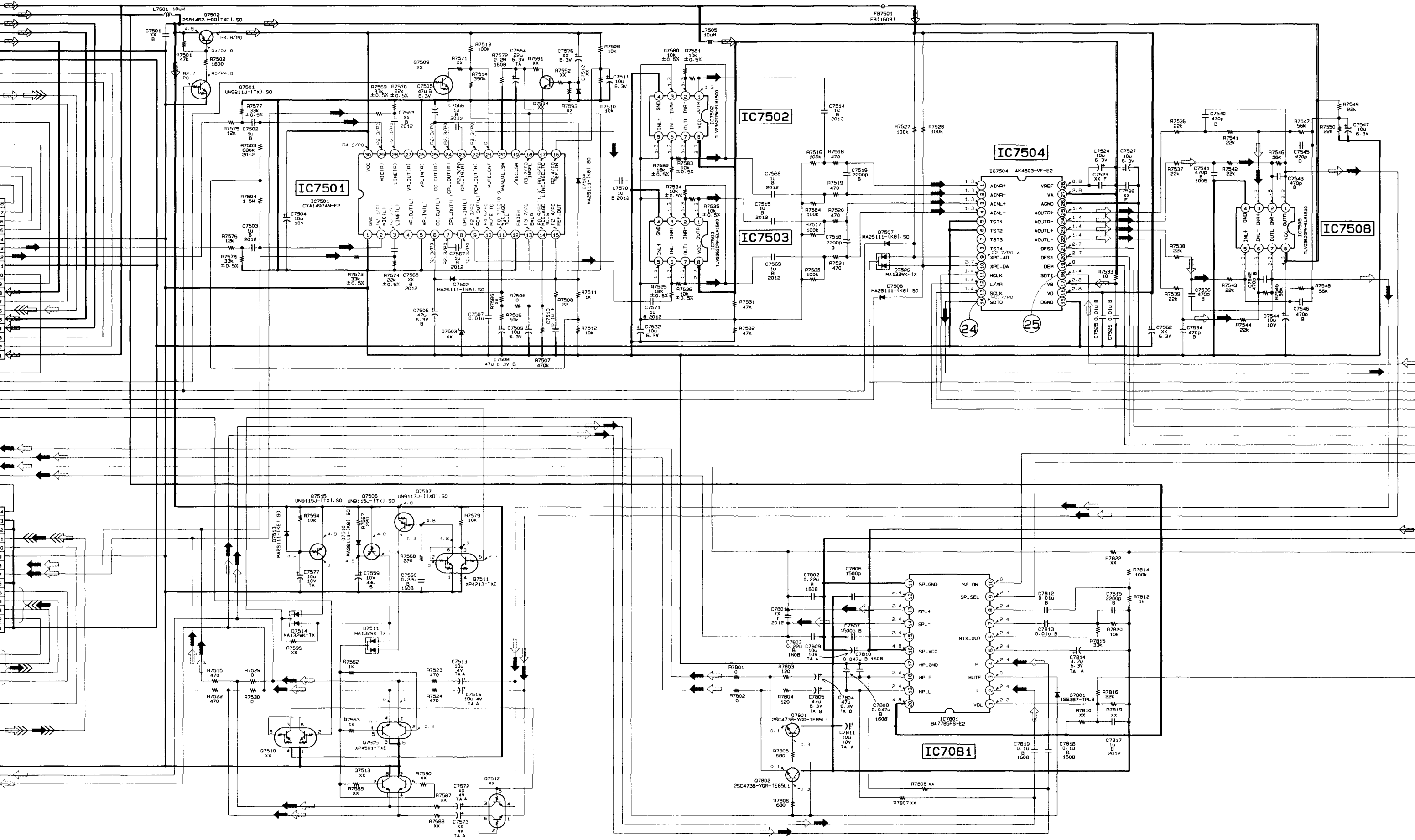
JK-156 BOARD (SIDE B)**JK-156 BOARD (SIDE A)**

4-41

AUDIO, FOCUS SWITCH, DV IN/OUT, AUDIO/VIDEO JACK
CB-58 (5/6) FC-62 JK-156**CB-58 BOARD (5/6) (AU BLOCK)**

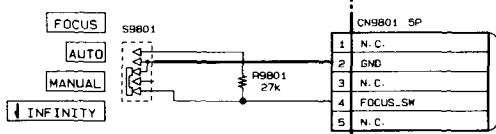
AUDIO

-REF. NO.: 10,000 SERIES-

 XX MARK : NO MOUNT
 NO MARK : CAMERA REC/PB mode
 R : REC mode
 P : PB mode
 I : LASER LINK ON
**FC-62 BOARD**

FOCUS SWITCH

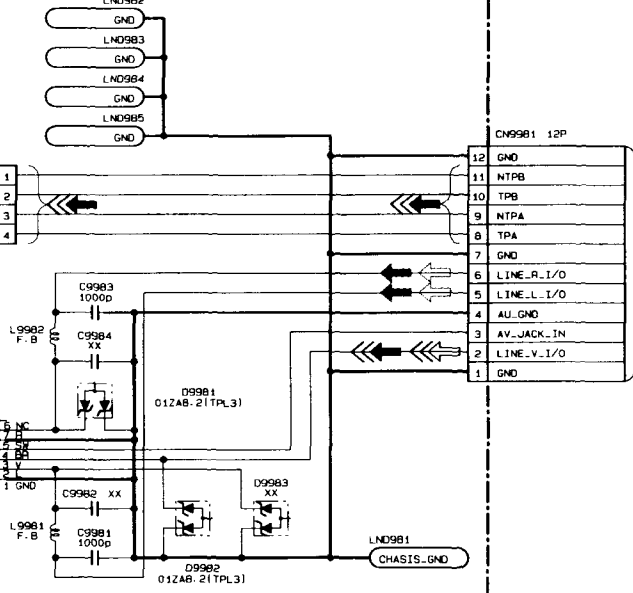
-REF. NO.: 40,000 SERIES-

**JK-156 BOARD**

DV IN/OUT, AUDIO/VIDEO JACK

-REF. NO.: 30,000 SERIES-

XX MARK : NO MOUNT



• SIGNAL PATH

	VIDEO SIGNAL		AUDIO SIGNAL
	CHROMA	Y/CHROMA	
REC		→	→
PB		→	→

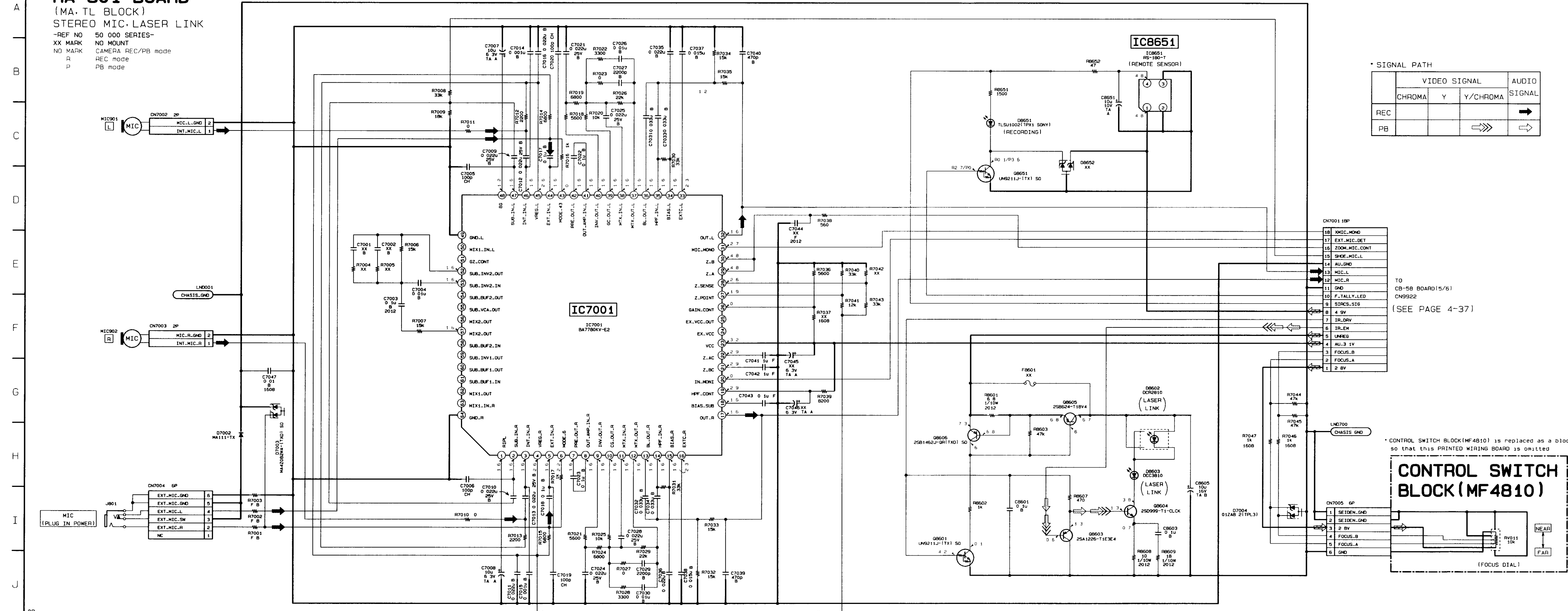
4-37

4-38

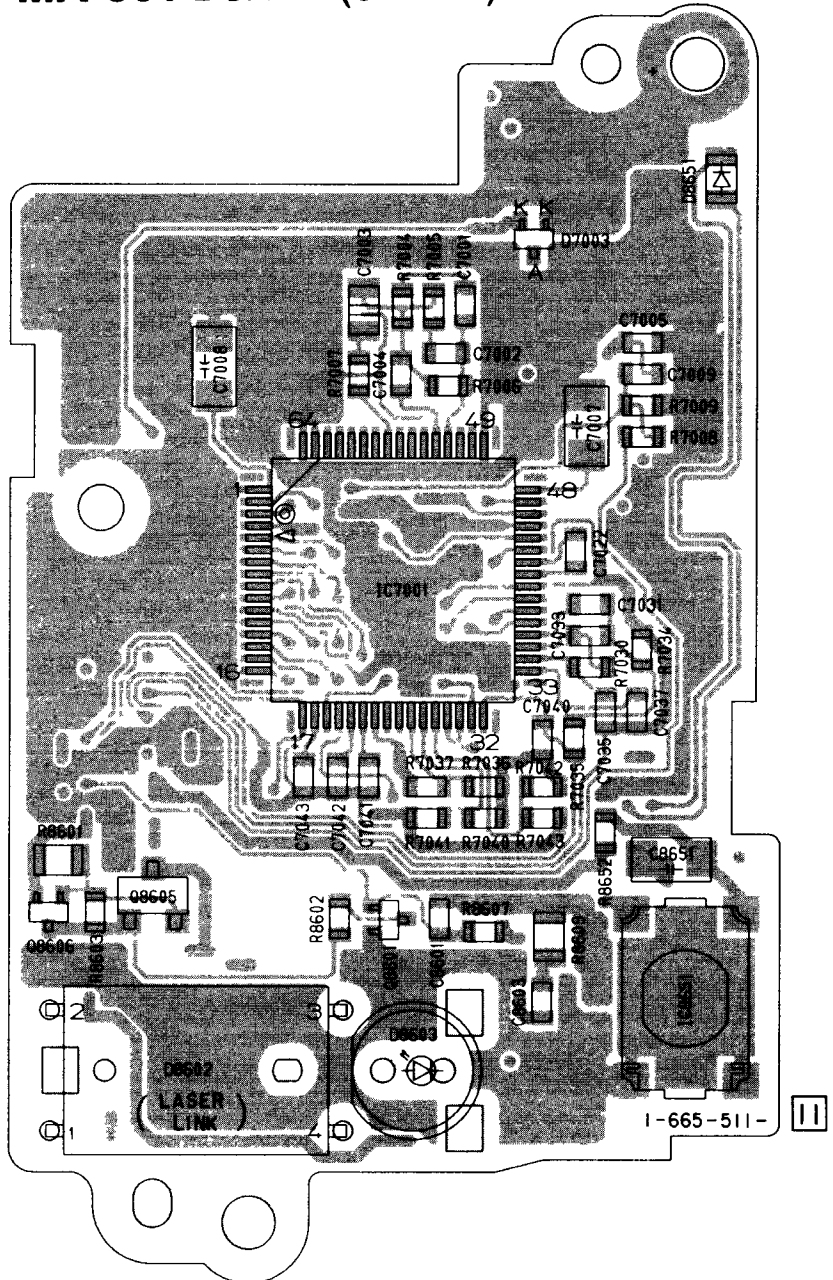
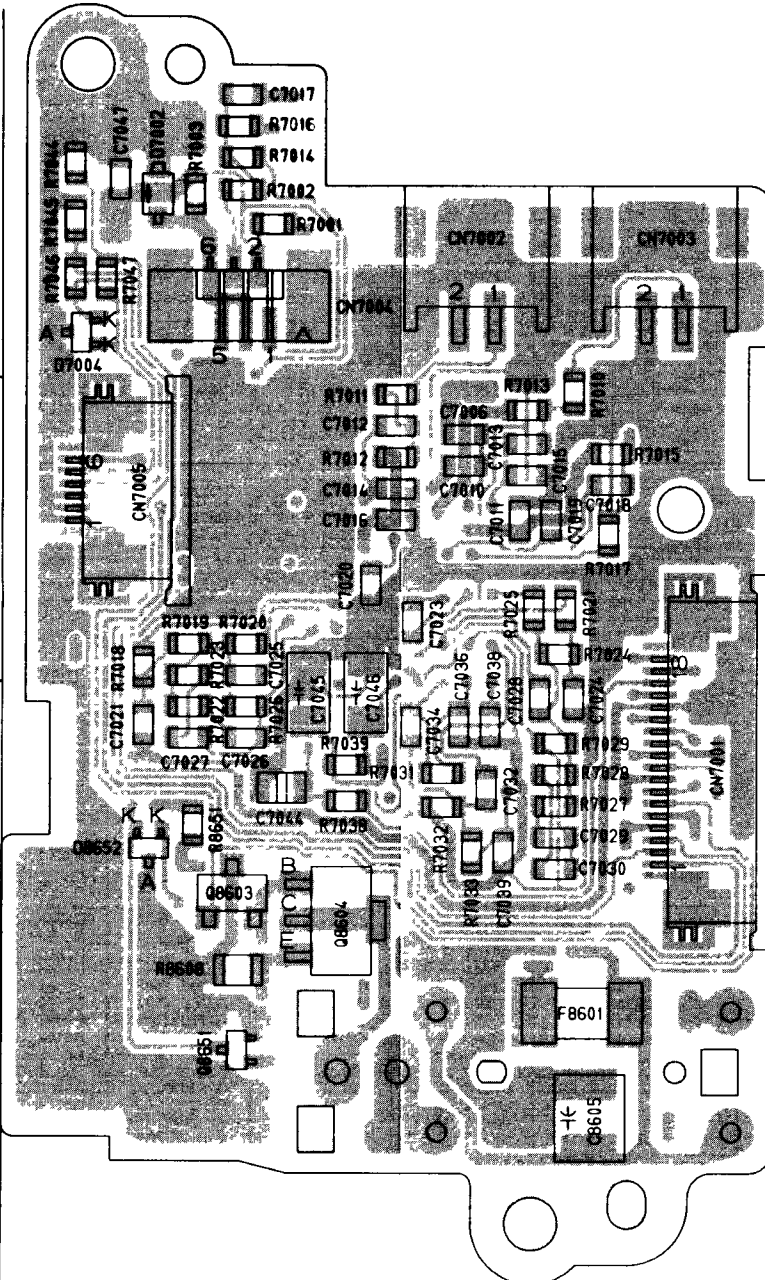
4-39




4-40


```
-REF NO      50 000 SERIES-
XX MARK      NO MOUNT
NO MARK      CAMERA REC/PB mode
R            REC mode
P            PB mode
```



MA-301 BOARD (SIDE A)



* SIGNAL PATH				
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				
PB				

TO
CB-58 BOARD(5/6)
CN9922
(SEE PAGE 4-37)

* CONTROL SWITCH BLOCK(MF4810) is replaced as a block so that this PRINTED WIRING BOARD is omitted

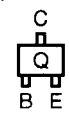
CONTROL SWITCH
BLOCK (MF4810)

- **For Printed Wiring Boards**

- This board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram

There are few cases that the part isn't mounted in this model is printed on this diagram

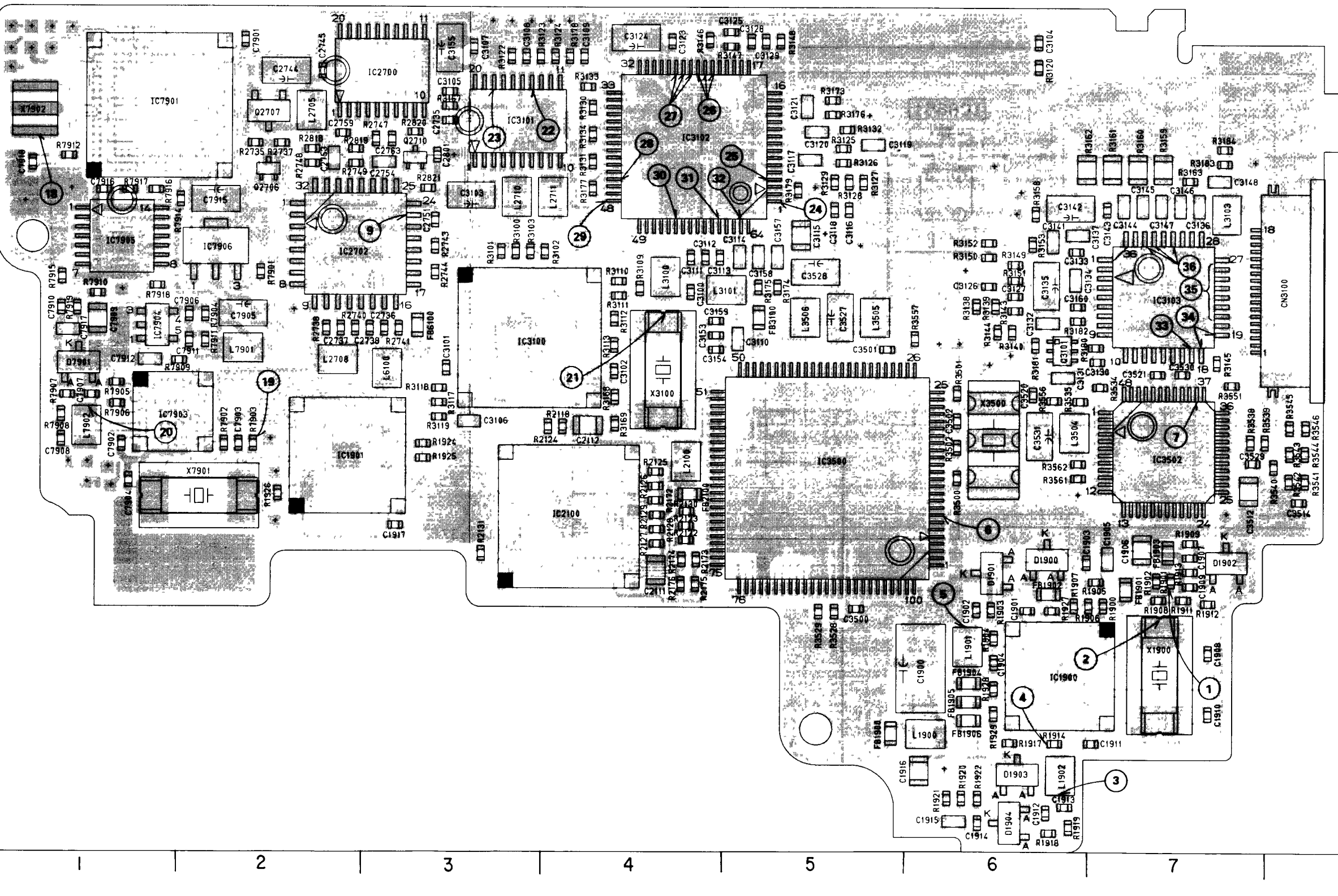
- Chip transistor



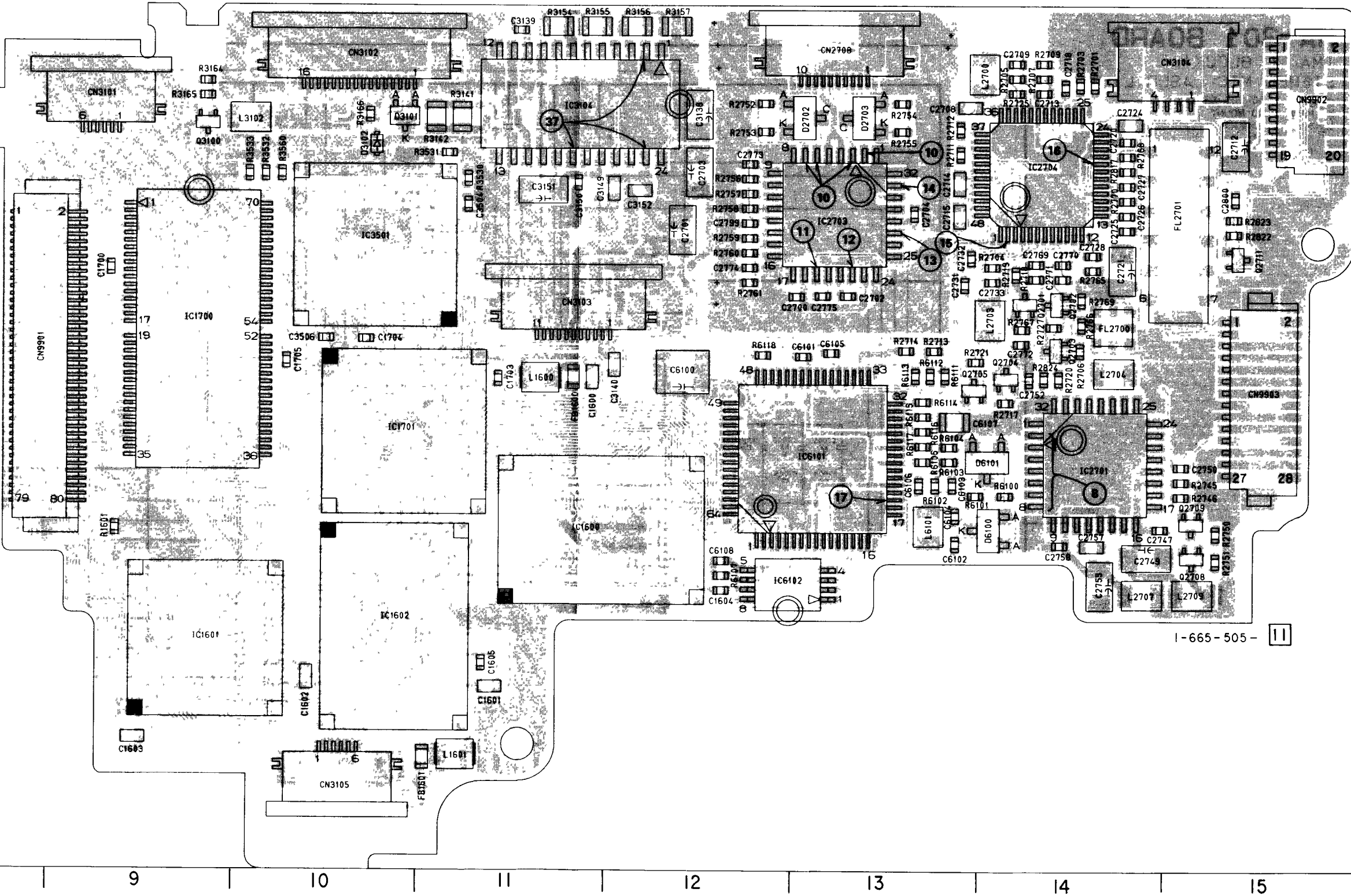
4-51

STEREO MIC, LASER LINK, CONTROL SWITCH BLOCK
MA-301 MF4810

RJ-74 BOARD (SIDE B)



RJ-74 BOARD (SIDE A)

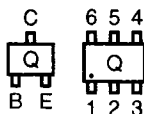


- **For Printed Wiring Boards.**

- This board is eight-layer print board. However, the patterns of layers 2 to 7 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

- Chip transistor



CB-58

CAMERA PROCESS, VIDEO OUT,
VIDEO DECODER, LASER LINK,
AUDIO, HI CONTROL

IK-1 (PANEL FUNCTION SWITCH)

FUNCTION SWITCH

PD-85
LCD RGB DE

LCD BACK LI

VK-42
(VTR CONTROL SWITCH)

(STEREO MIC, LASER LINK)

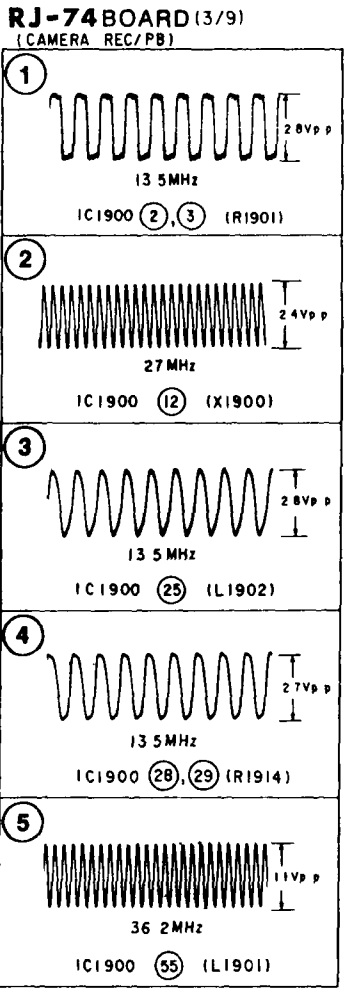
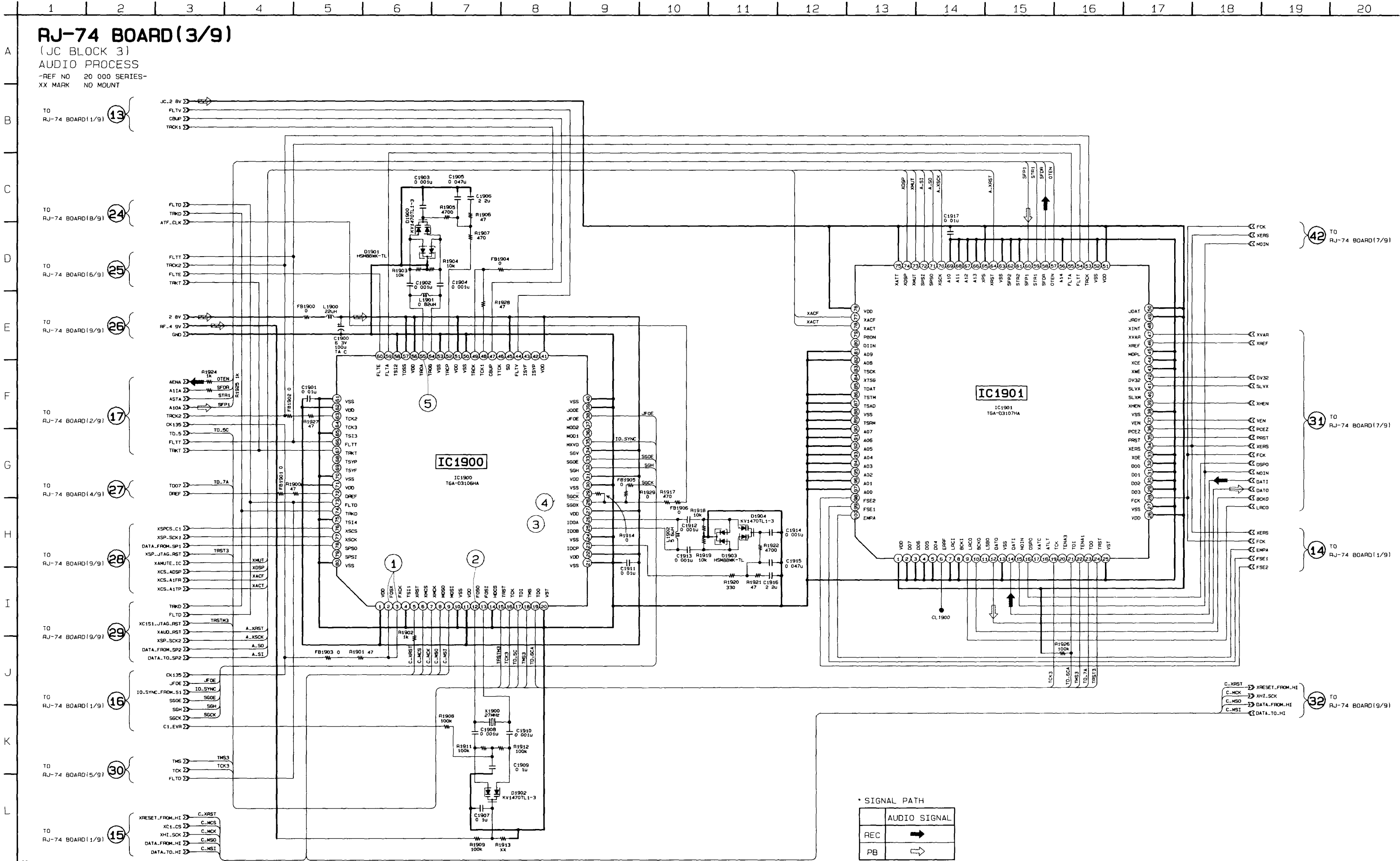
RJ-74
BLOCKING, COMPRESS, ECC, TBC, CHCD, AUDIO
PROCESS, RF INTERFACE, REC/PB HEAD AMP, DV
PROCESS, AUDIO DSP, SERVO, SIGNAL PROCESS
CONTROL



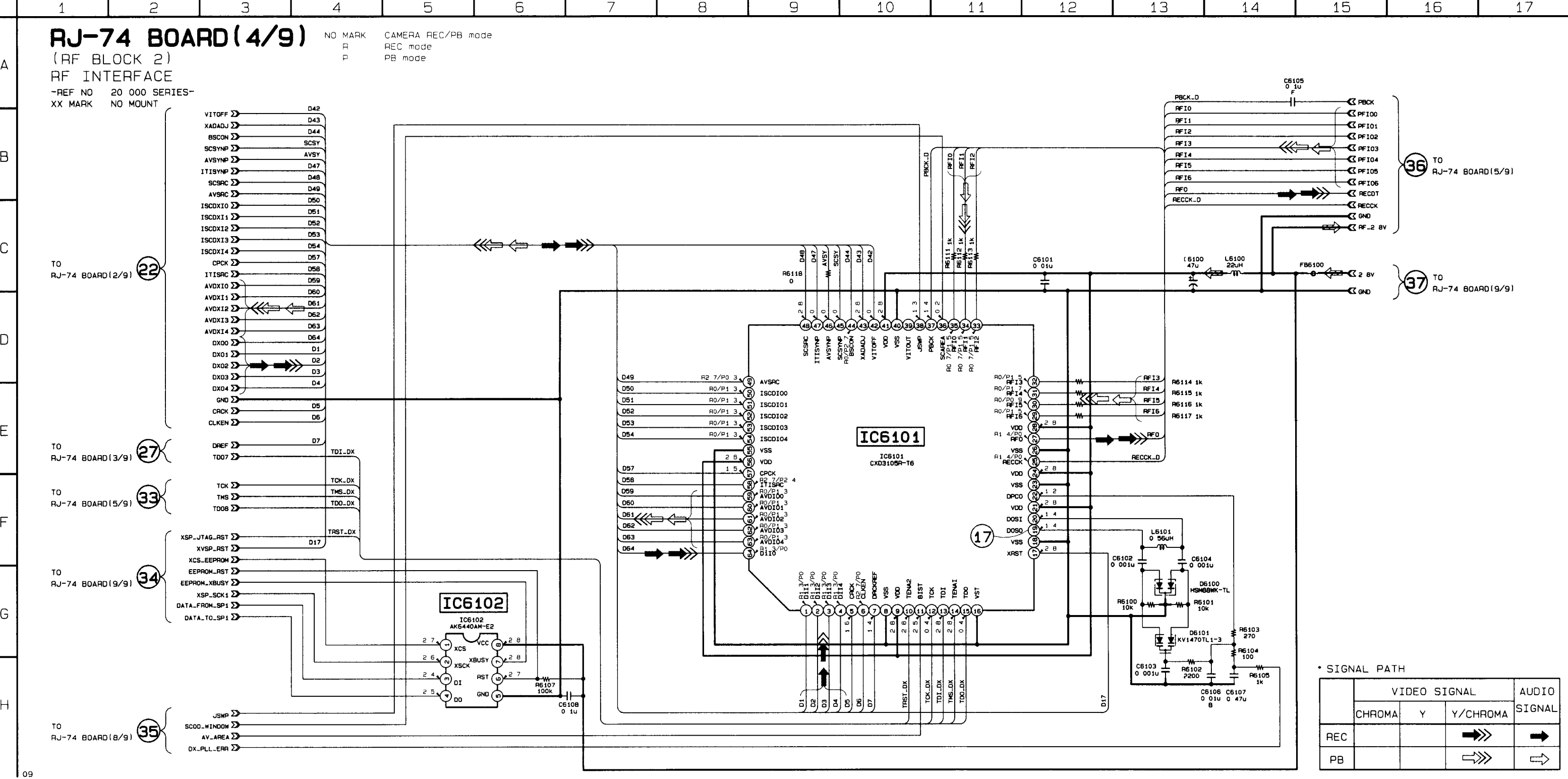
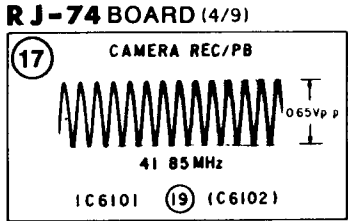


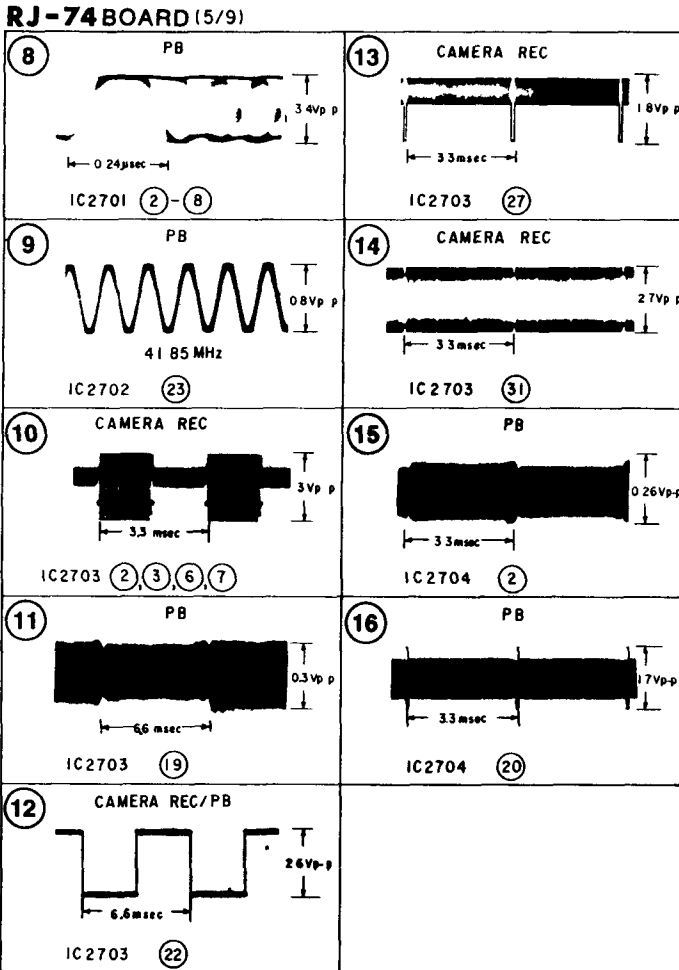
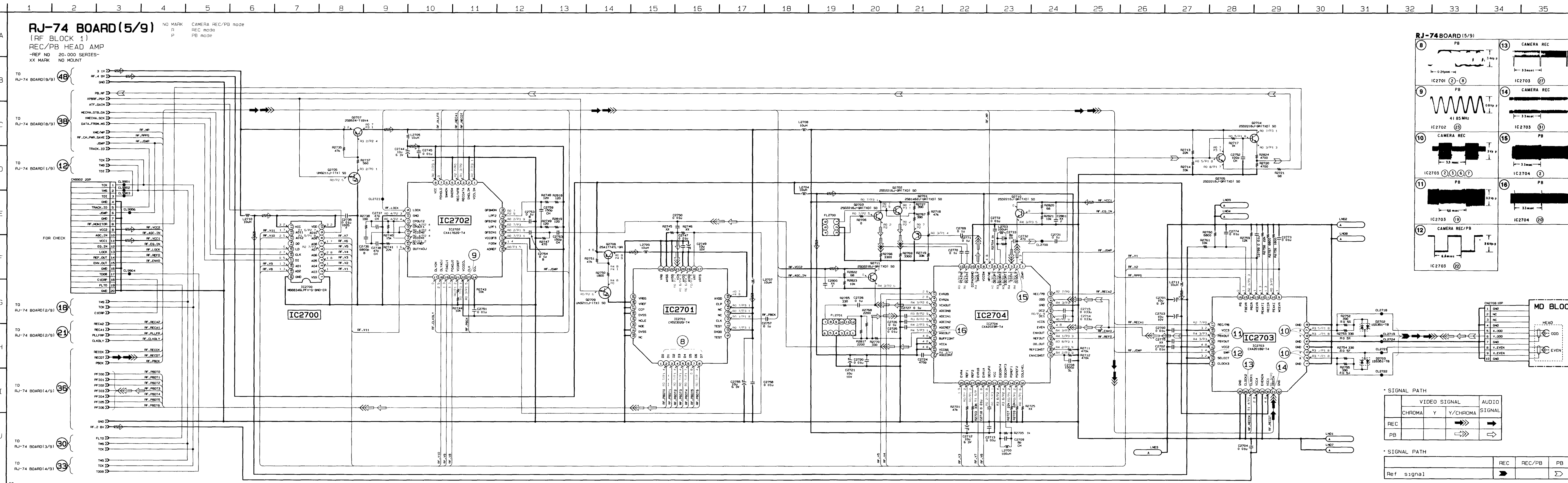
• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡➡➡	➡
PB			➡➡➡	➡



• Refer to page 4-53 for Printed Wiring Board





*** SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			→	→
PB			→	→

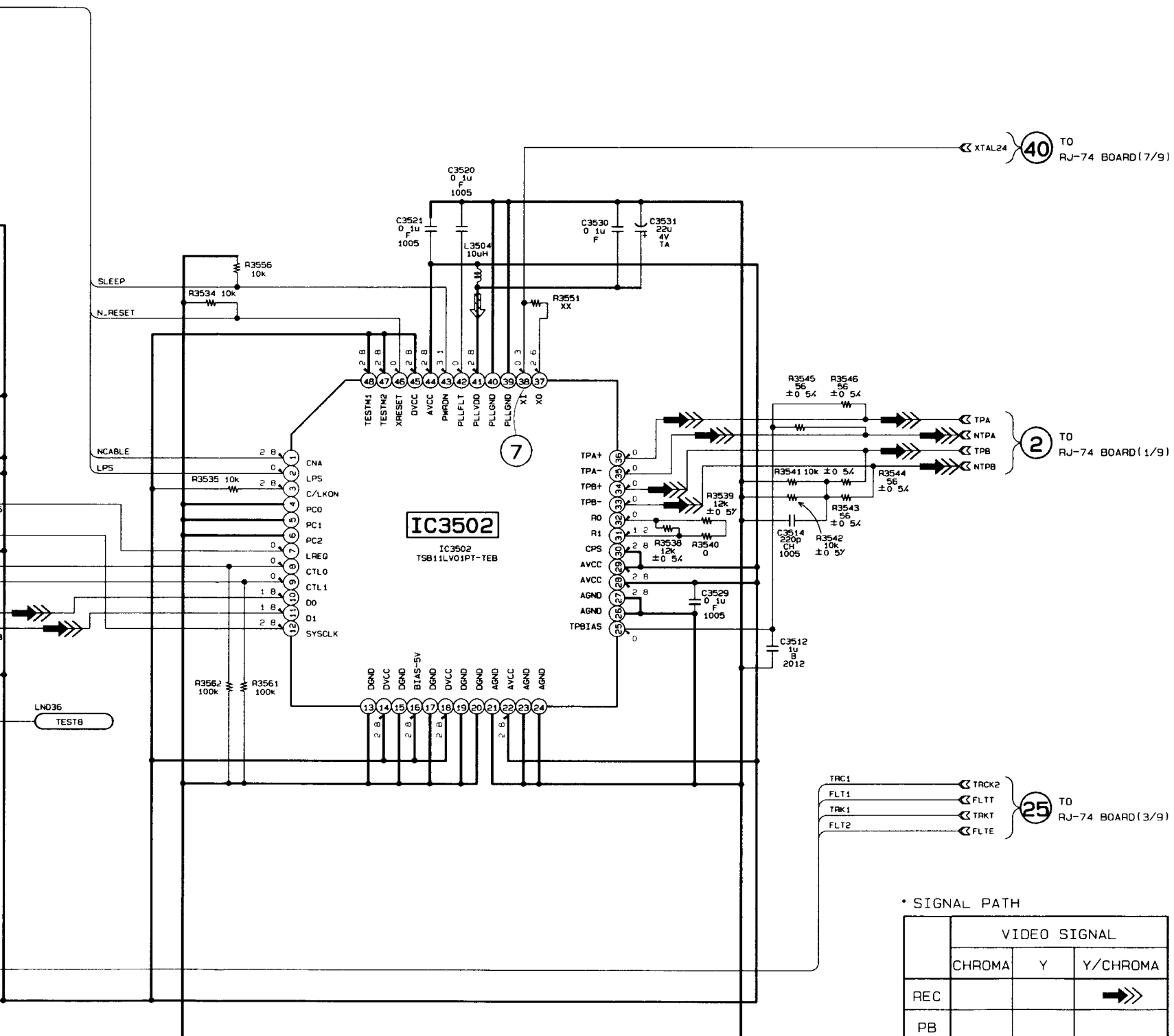
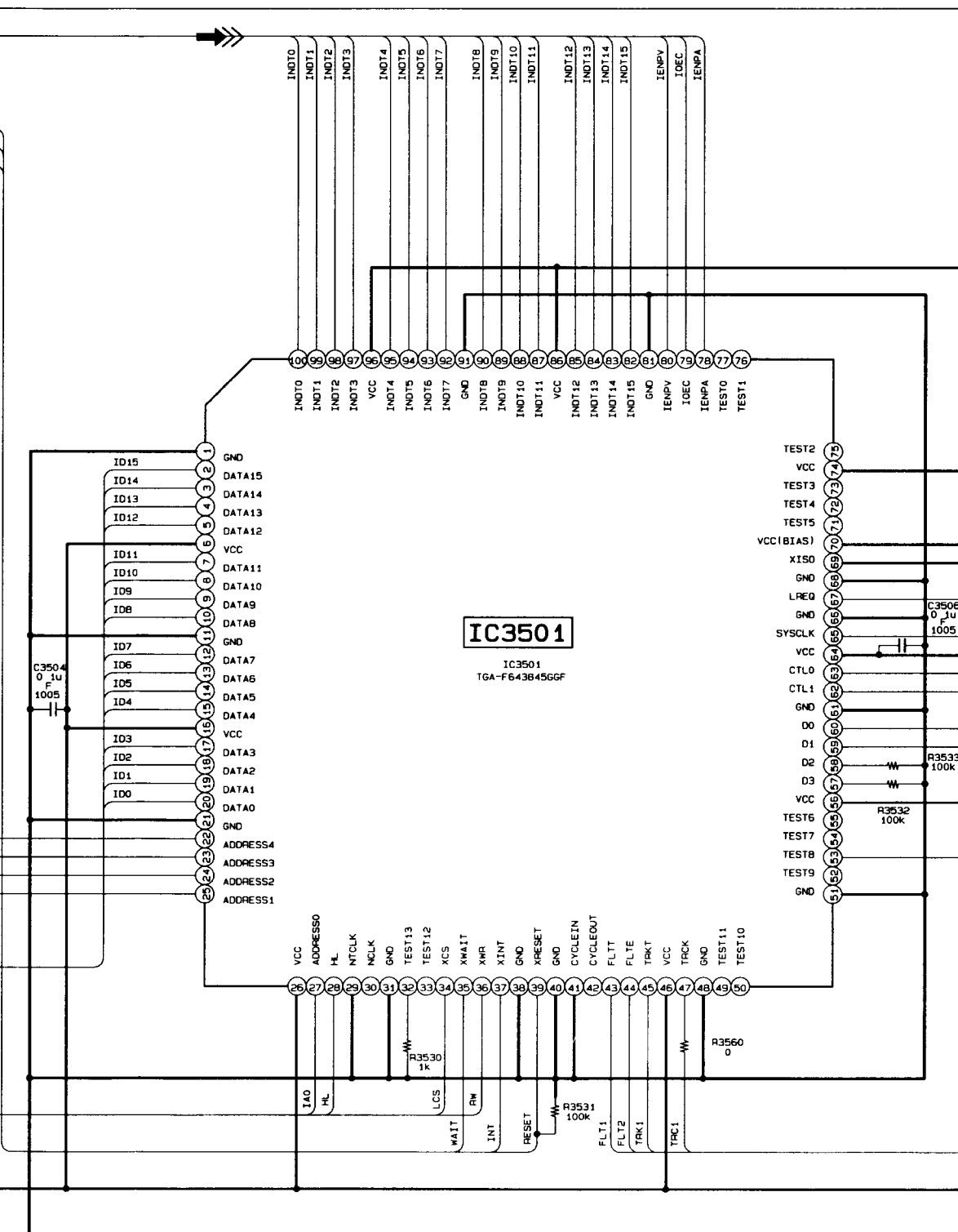
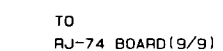
*** SIGNAL PATH**

	REC	REC/PB	PB
Ref signal	→	→	→




(ID BLOCK)
DV PROCESS

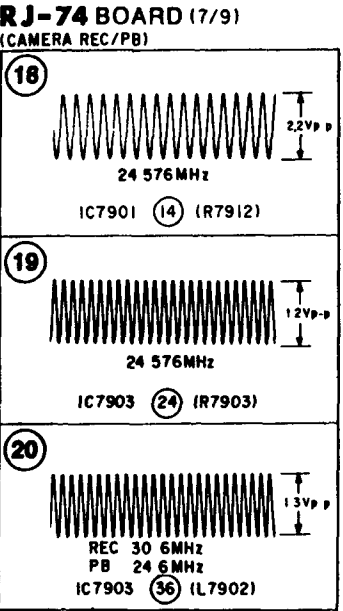
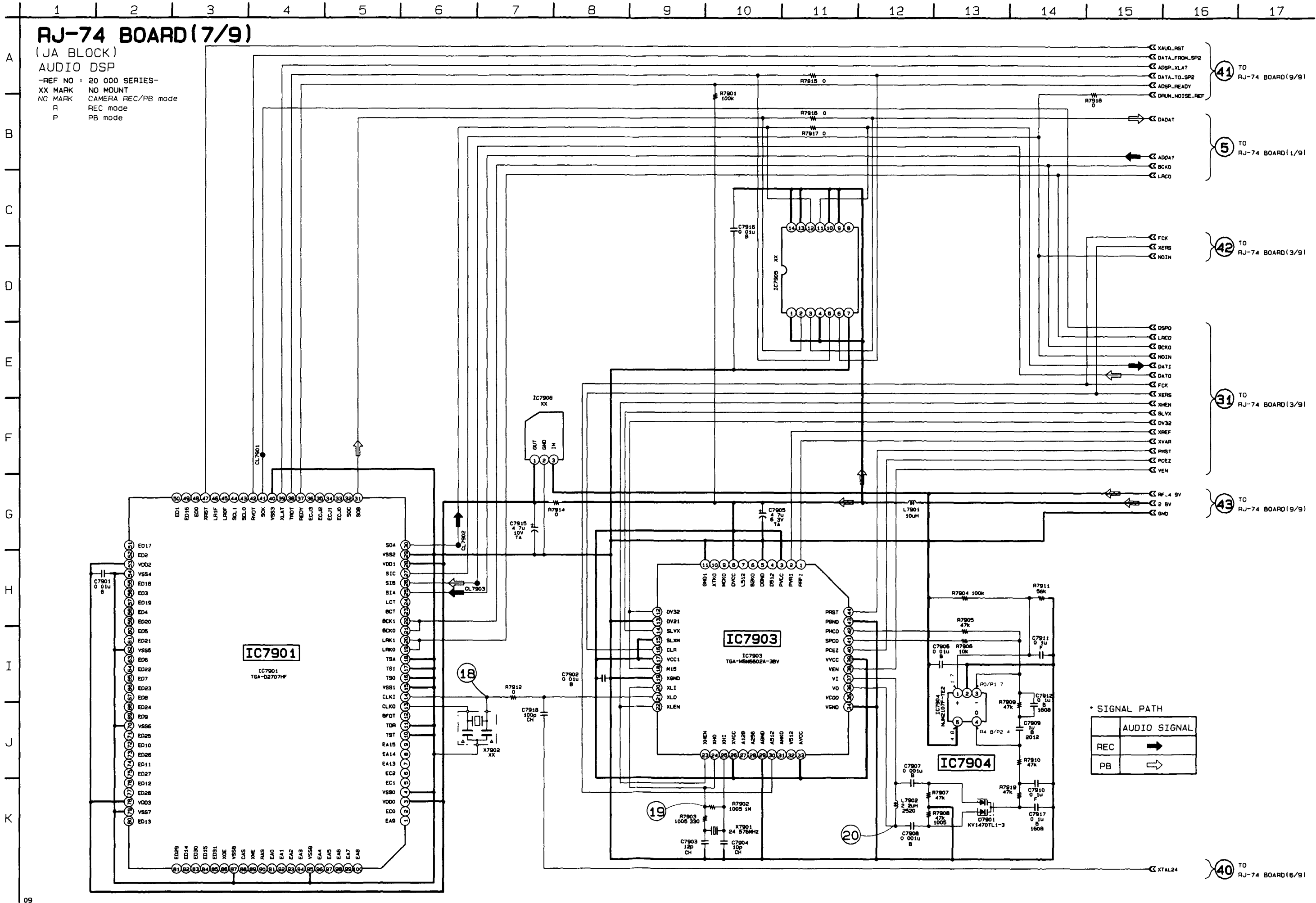
```
-REF NO      20 000 SERIES-
XX MARK      NO MOUNT
NO MARK      CAMERA REC/PB mode
  R          REC mode
  P          PB mode
```

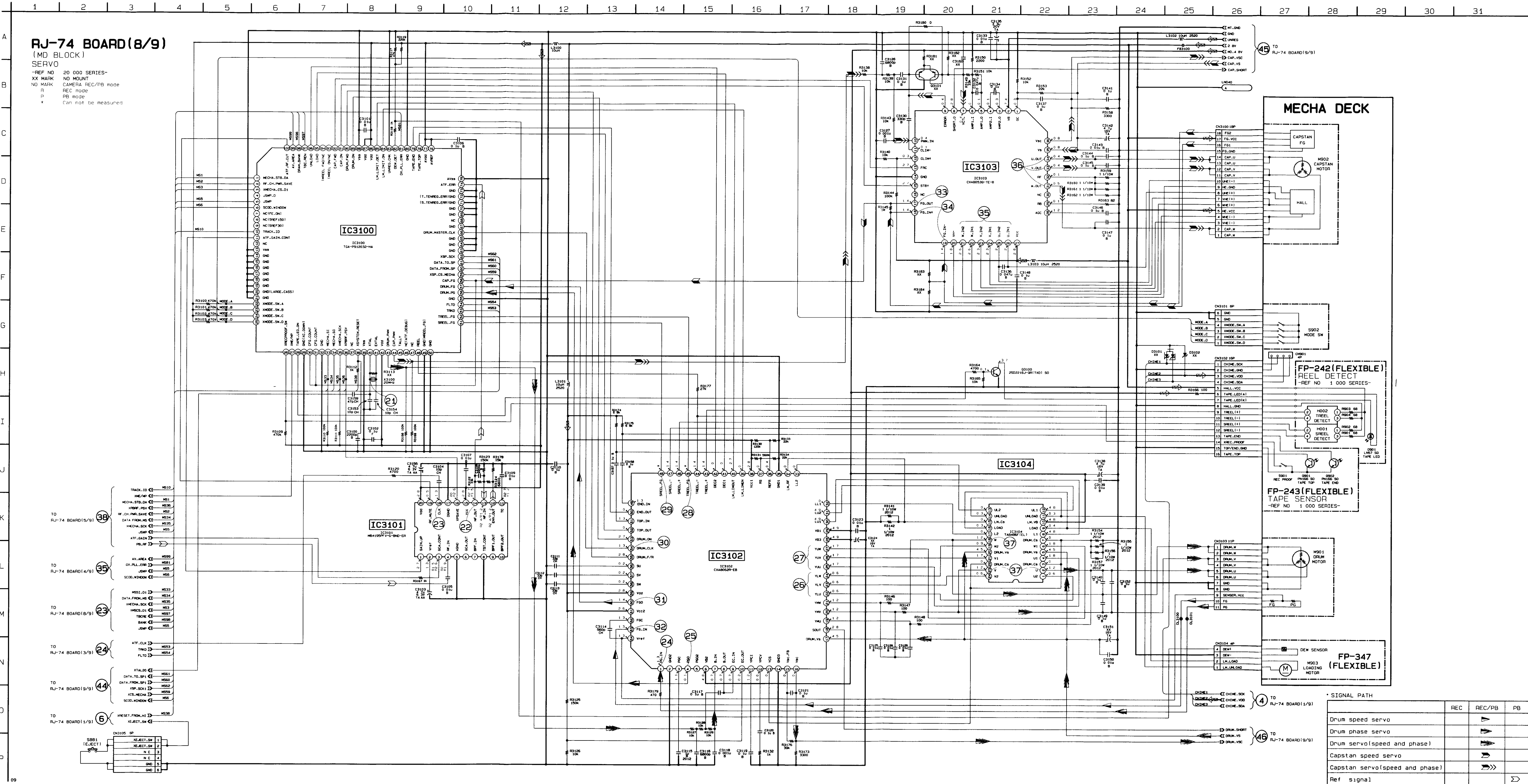


- SIGNAL PATH

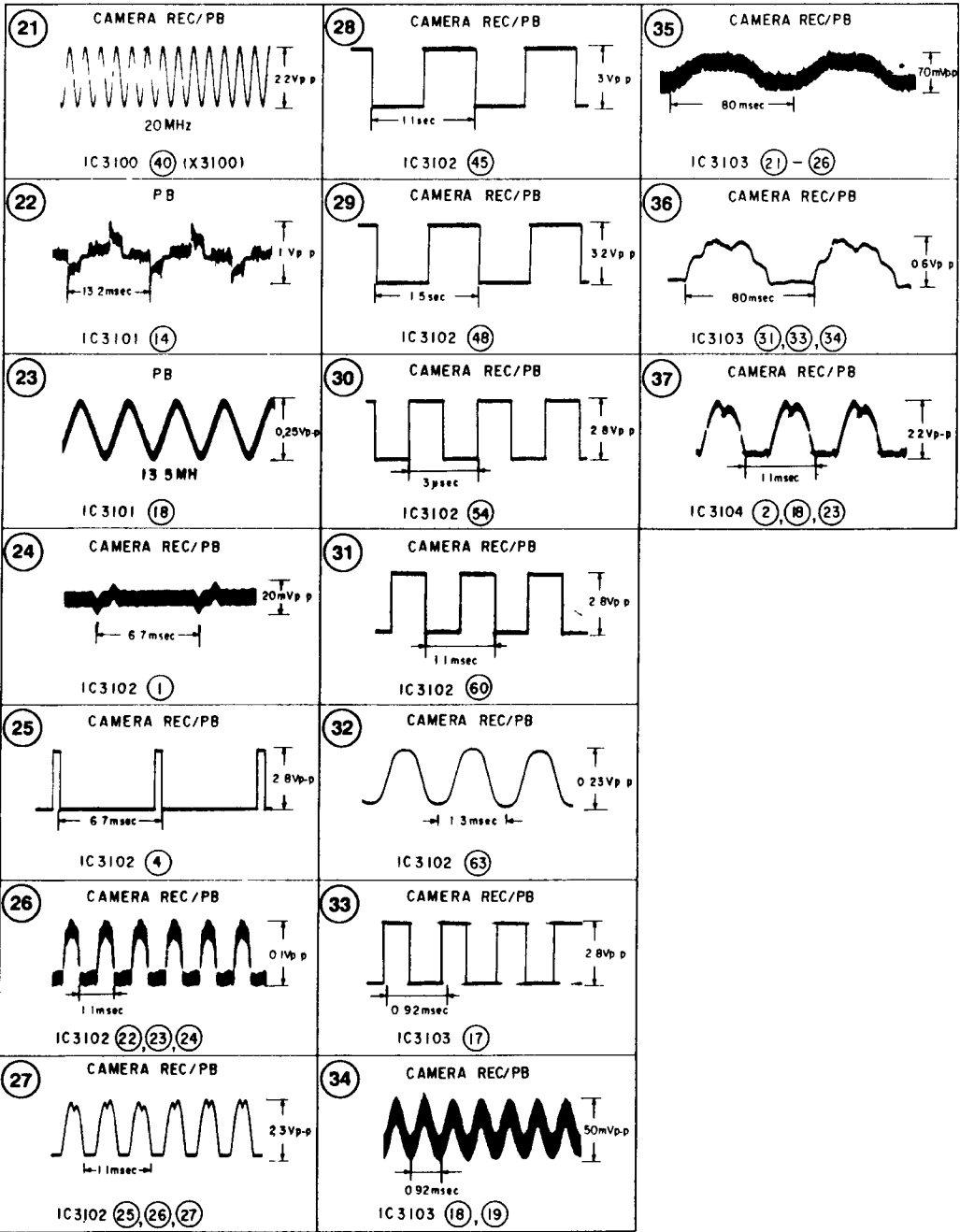
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB			

• Refer to page 4-53 for Printed Wiring Board





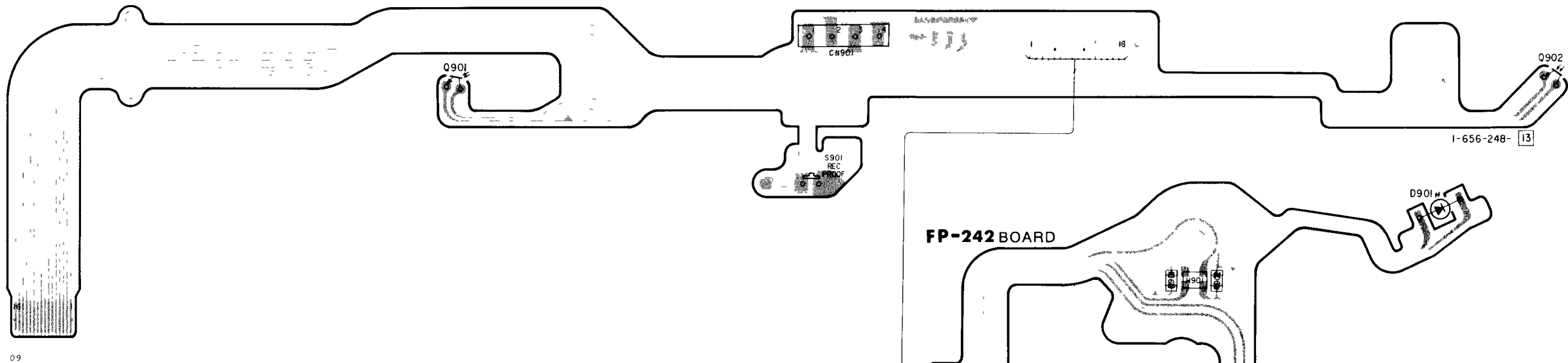
RJ-74 BOARD (8/9)



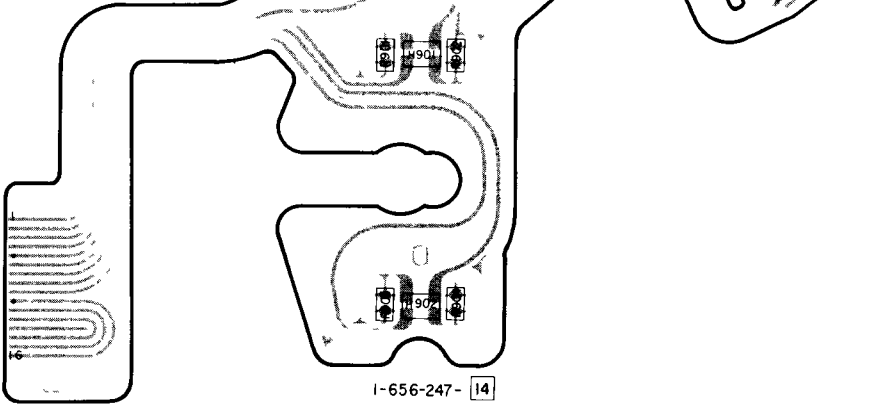
FP-242 (REEL DETECT), FP-243 (TAPE SENSOR) PRINTED WIRING BOARDS

- Ref No. FP-242, FP-243 BOARDS 1,000 series -

FP-243 BOARD

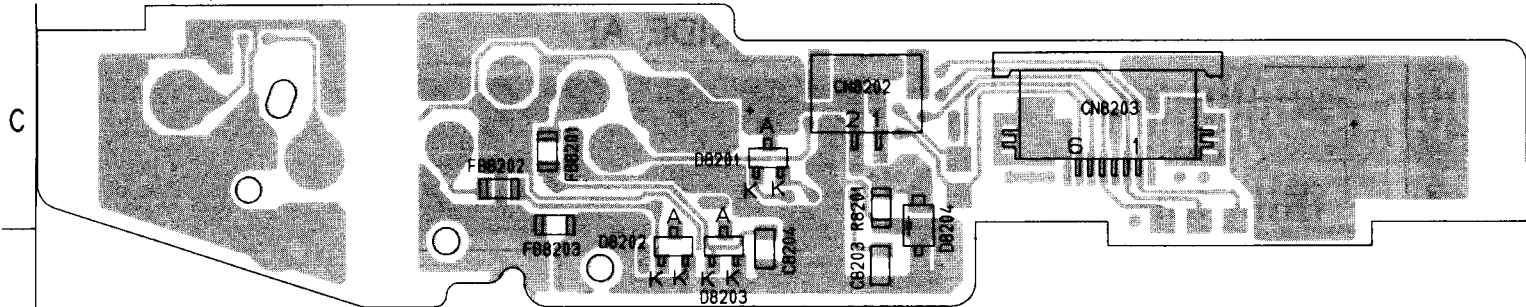


FP-242 BOARD

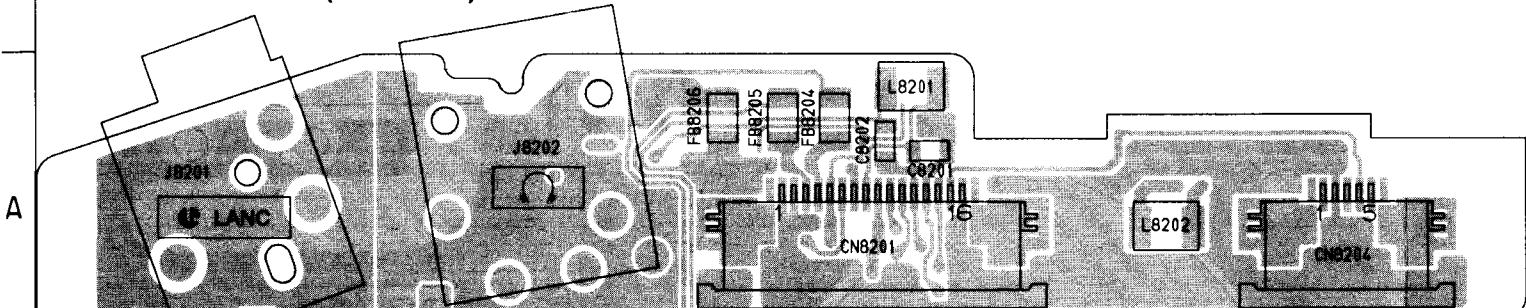




HL-8 BOARD (SIDE B)



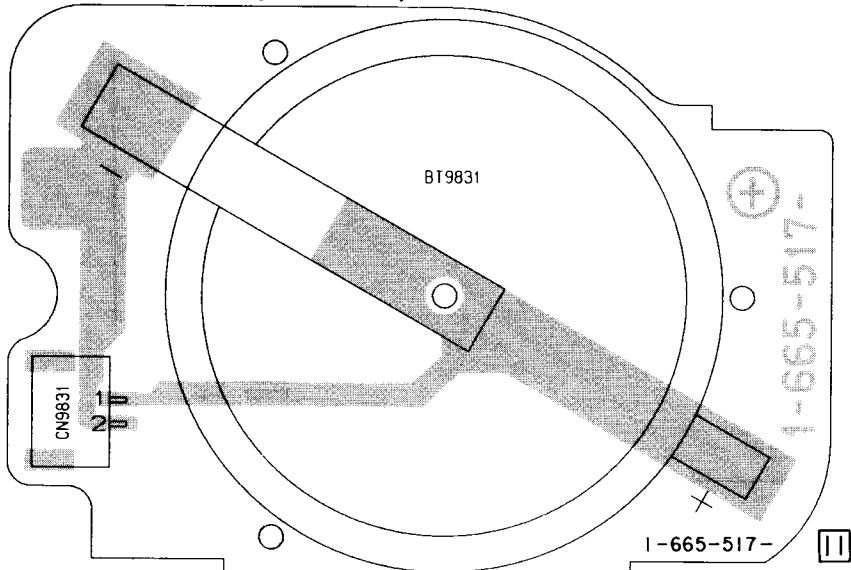
HL-8 BOARD (SIDE A)



HL-8 BOARD

C8201	A-3
C8202	A-3
C8203	B-3
C8204	B-3
CN8201	A-3
CN8202	C-3
CN8203	C-4
CN8204	A-5
D8201	C-3
D8202	B-3
D8203	B-3
D8204	C-3
FB8201	C-2
FB8202	C-2
FB8203	C-2
FB8204	A-3
FB8205	A-3
FB8206	A-3
J8201	A-1
J8202	A-2
L8201	A-3
L8202	A-4
R8201	C-3

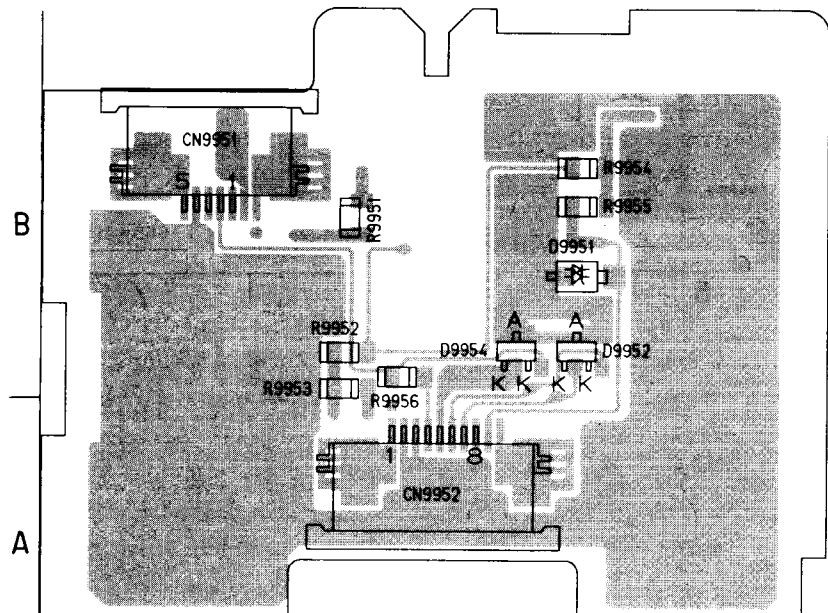
LI-1 BOARD (SIDE A)



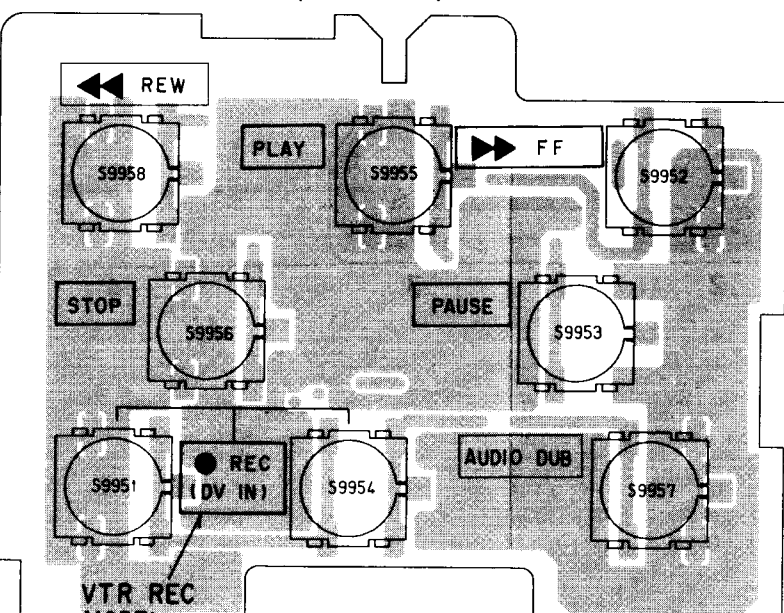
- For Printed Wiring Boards.
- This board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

VK-42 BOARD (SIDE B)

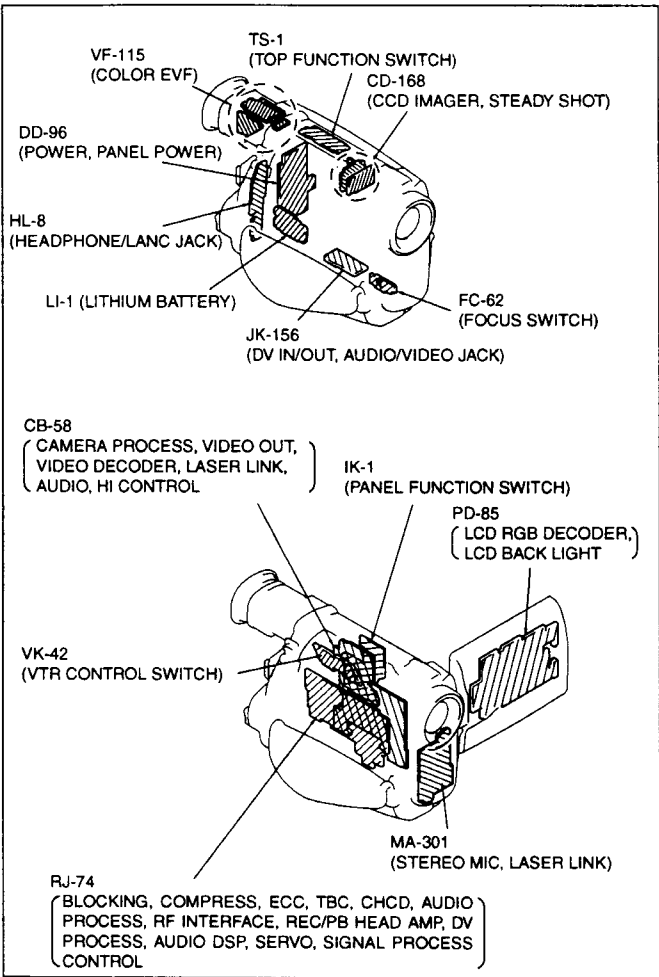


VK-42 BOARD (SIDE A)

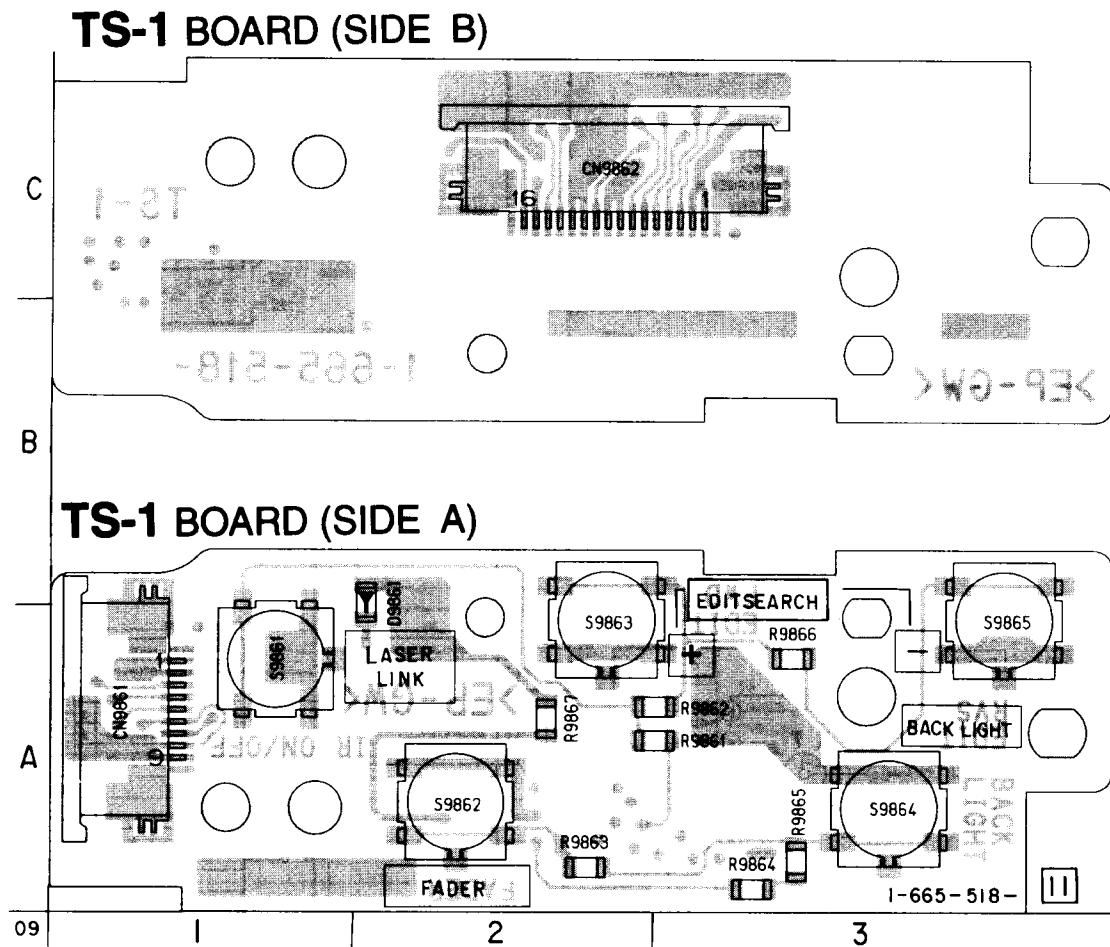


VK-42 BOARD

CN9951	B-1
CN9952	A-2
D9951	B-2
D9952	B-2
D9954	B-2
R9951	B-2
R9952	B-1
R9953	B-1
R9954	B-2
R9955	B-2
R9956	B-2
S9951	A-4
S9952	B-5
S9953	B-5
S9954	A-4
S9955	B-5
S9956	B-4
S9957	A-5
S9958	B-4



IK-1 (PANEL FUNCTION SWITCH),TS-1 (TOP FUNCTION SWITCH) PRINTED WIRING BOARD
- Ref No. IK-1 BOARD: 40,000 series, Ref No. TS-1 BOARD: 50,000 series -



- For Printed Wiring Boards.
 - This board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- There are few cases that the part isn't mounted in this model is printed on this diagram.

TS-1 BOARD

CN9861 A-1
CN9862 C-2

D9861 B-2

R9861 A-3
R9862 A-3
R9863 A-2
R9864 A-3
R9865 A-3
R9866 A-3
R9867 A-2

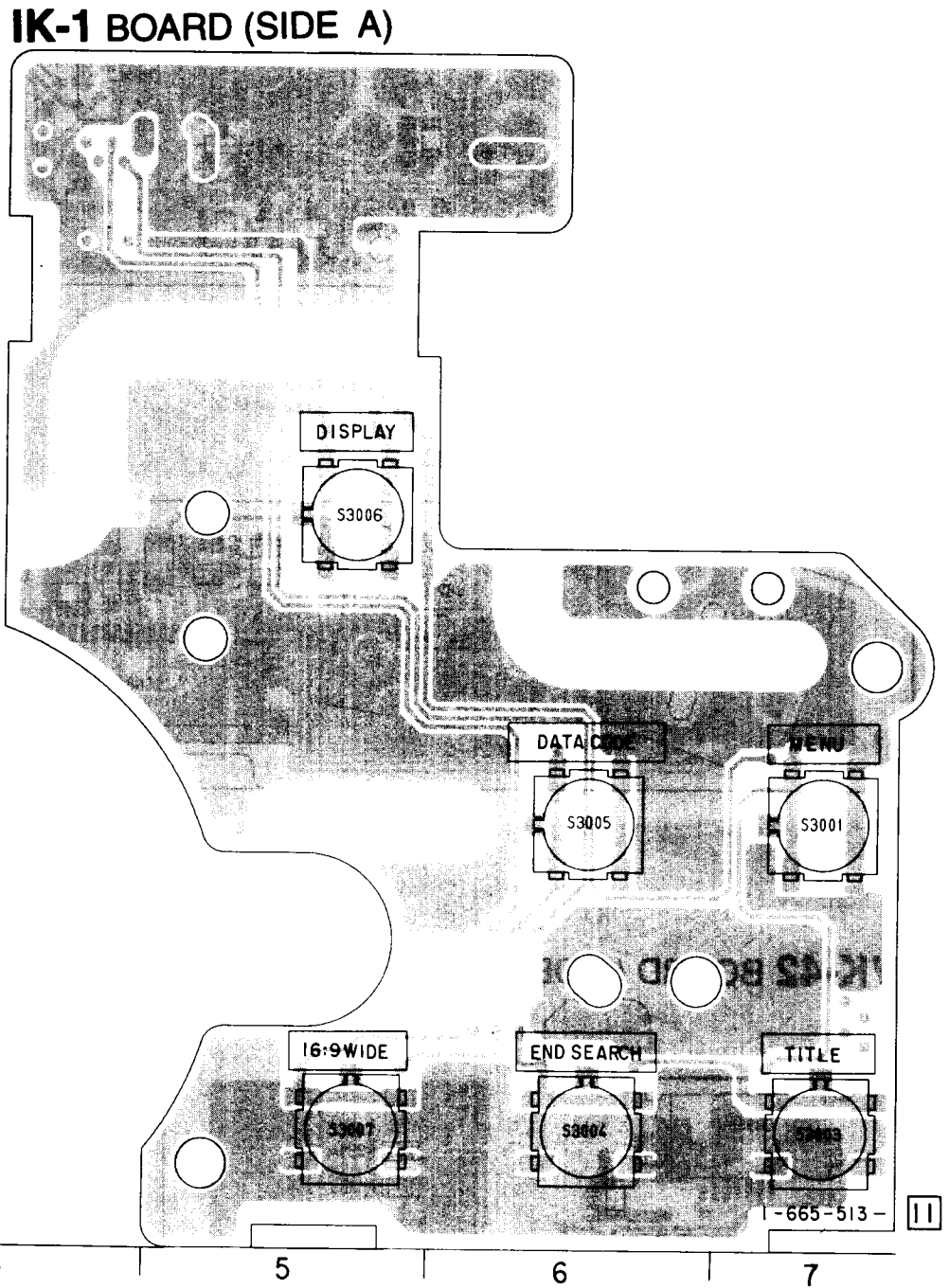
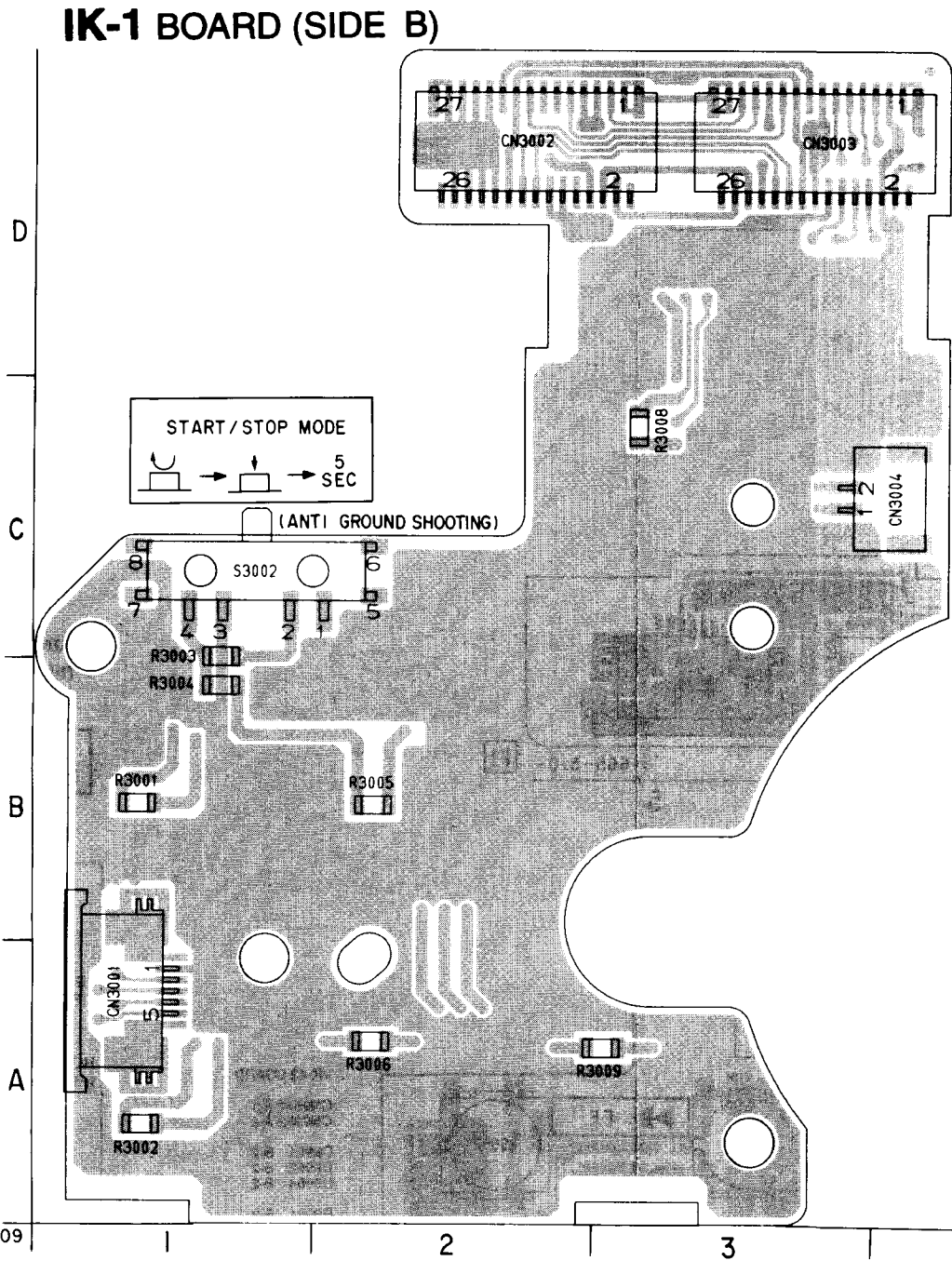
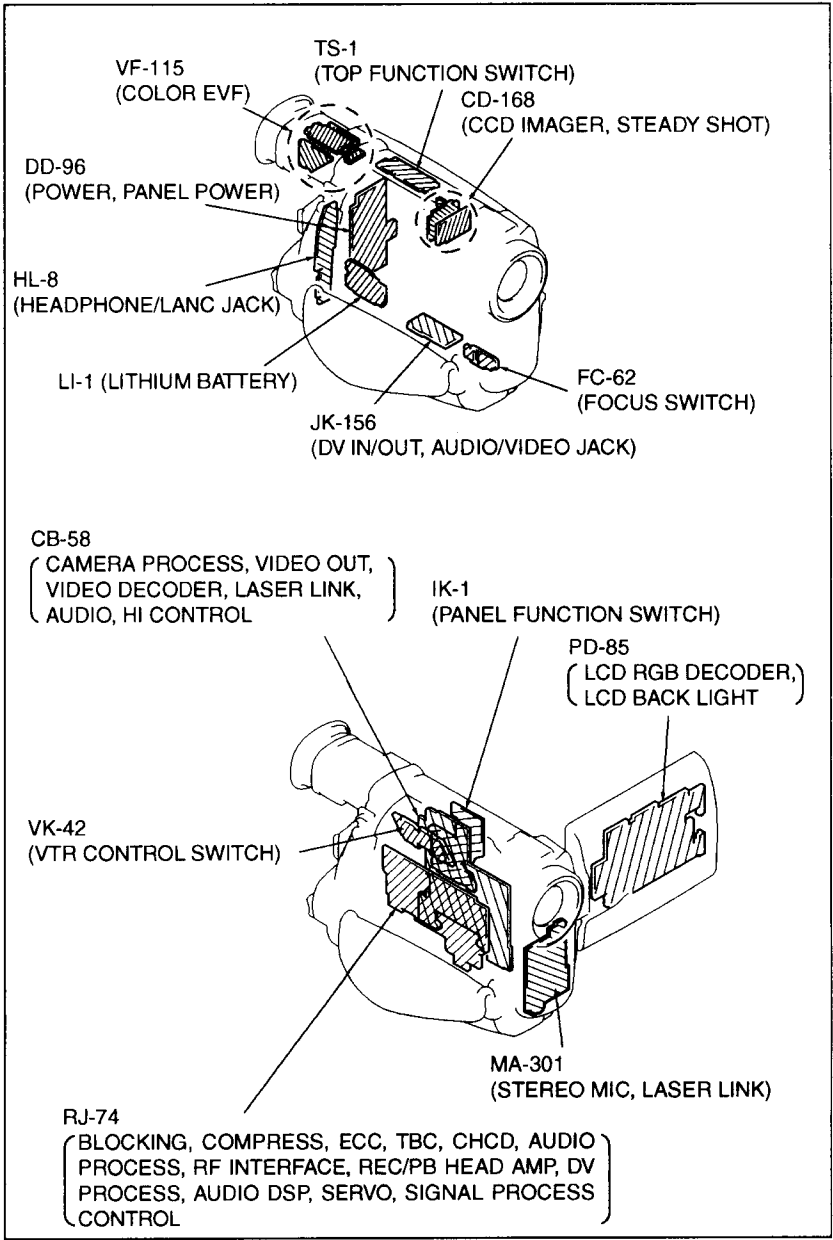
S9861 A-1
S9862 A-2
S9863 A-2
S9864 A-3
S9865 A-3

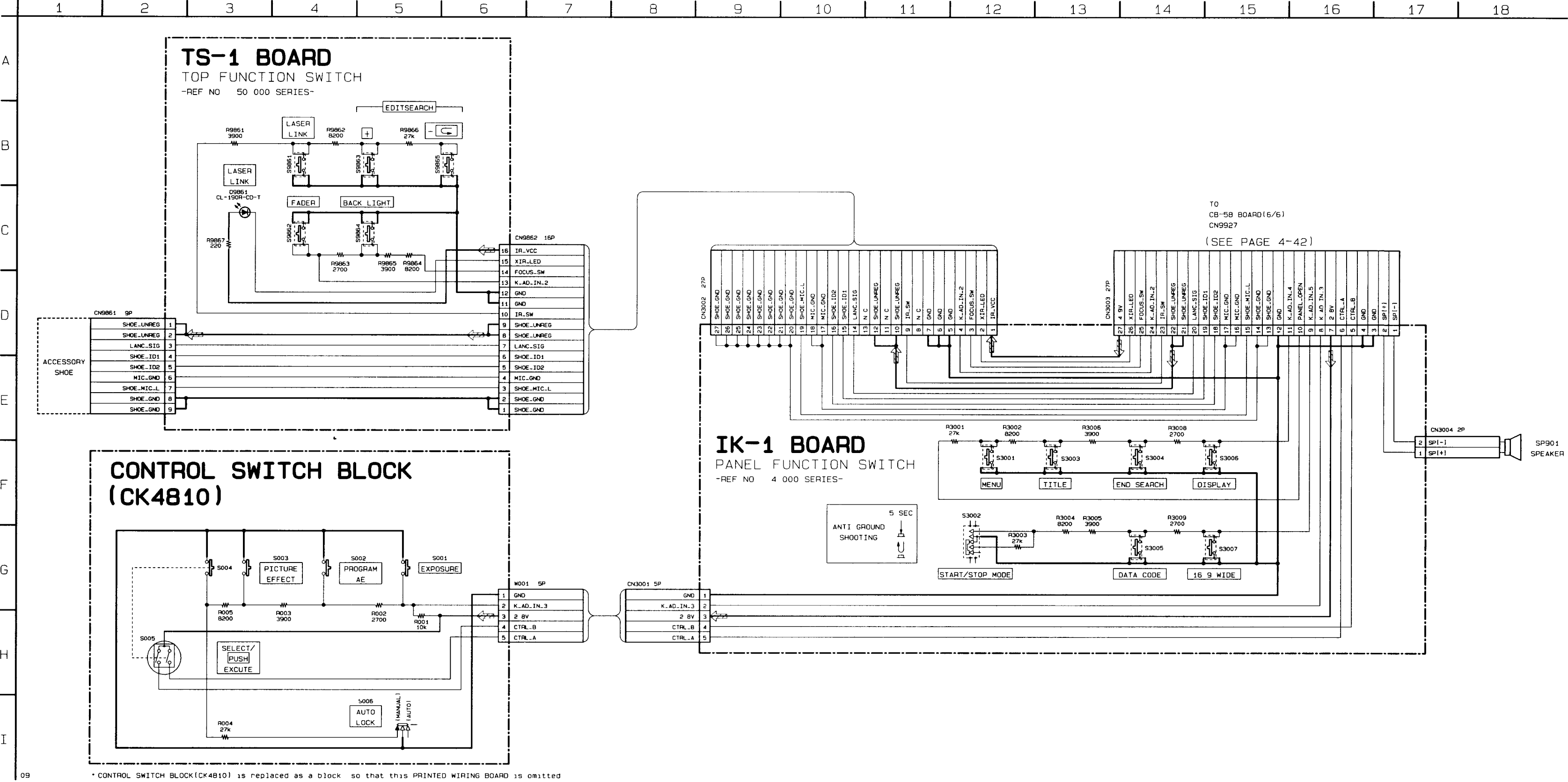
IK-1 BOARD

CN3001 A-1
CN3002 D-2
CN3003 D-3
CN3004 C-4

R3001 B-1
R3002 A-1
R3003 C-1
R3004 B-1
R3005 B-2
R3006 A-2
R3008 C-3
R3009 A-3

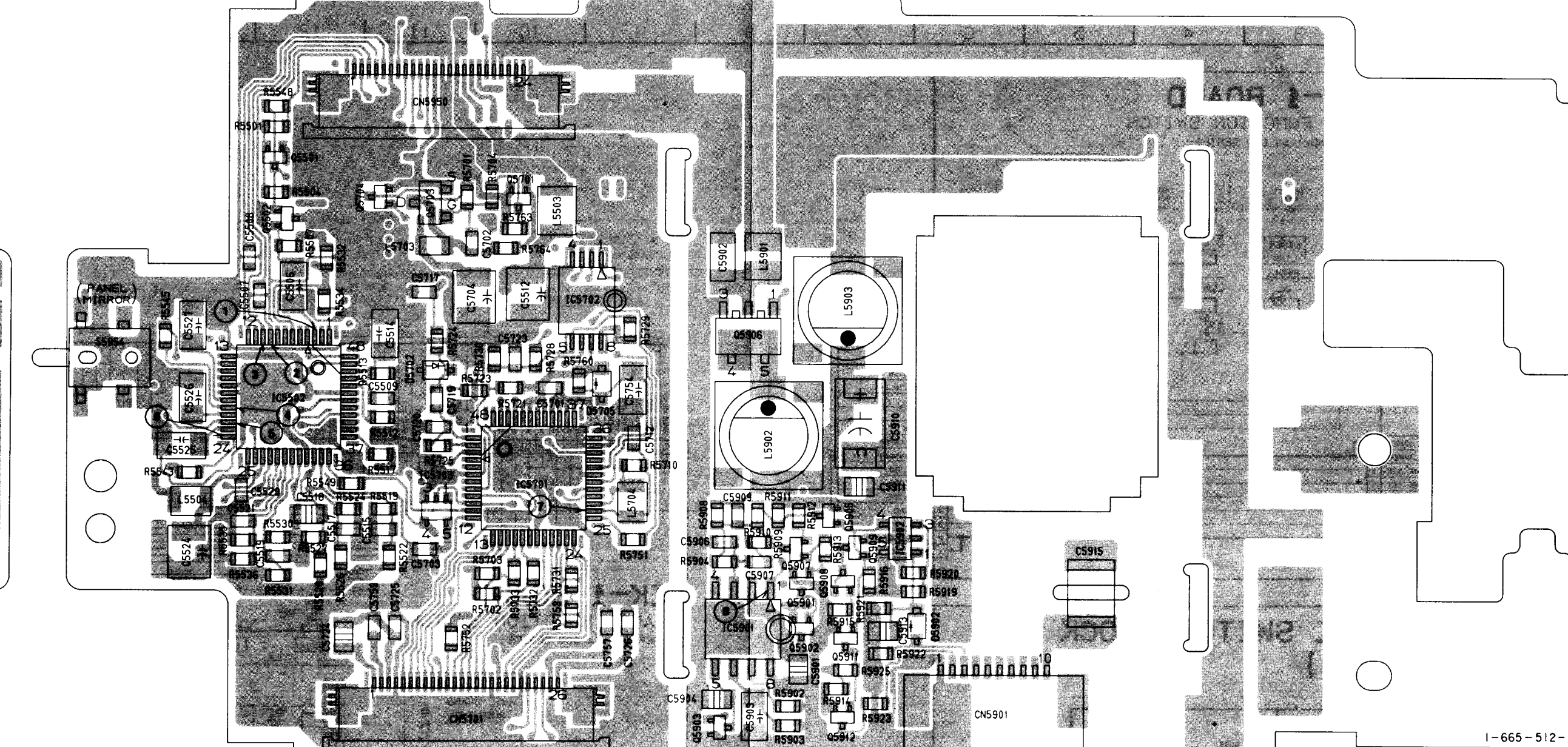
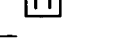
S3001 B-7
S3002 C-1
S3003 A-7
S3004 A-6
S3005 B-6
S3006 C-5
S3007 A-5





09 * CONTROL SWITCH BLOCK(CK4810) is replaced as a block so that this PRINTED WIRING BOARD is omitted

PD-85 BOARD (SIDE A)



1-665-512-

MA-301
(STEREO MIC. LASER LINK)

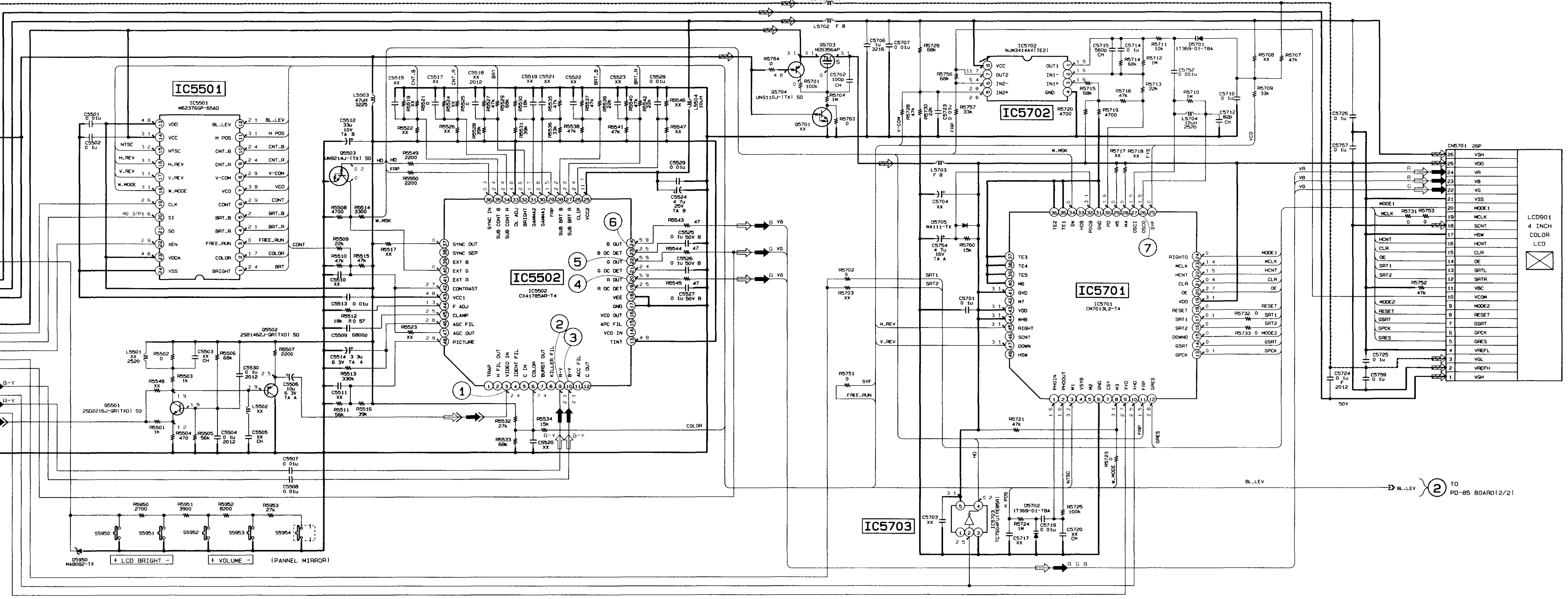
PD-85 BOARD (1/2)

(RGB, TG BLOCK)
LCD RGB DECODER
-REF NO 30 000 SERIES-
XX MARK NO MOUNT
NO CAMERA REC/PB mode
R REC mode
P PB mode

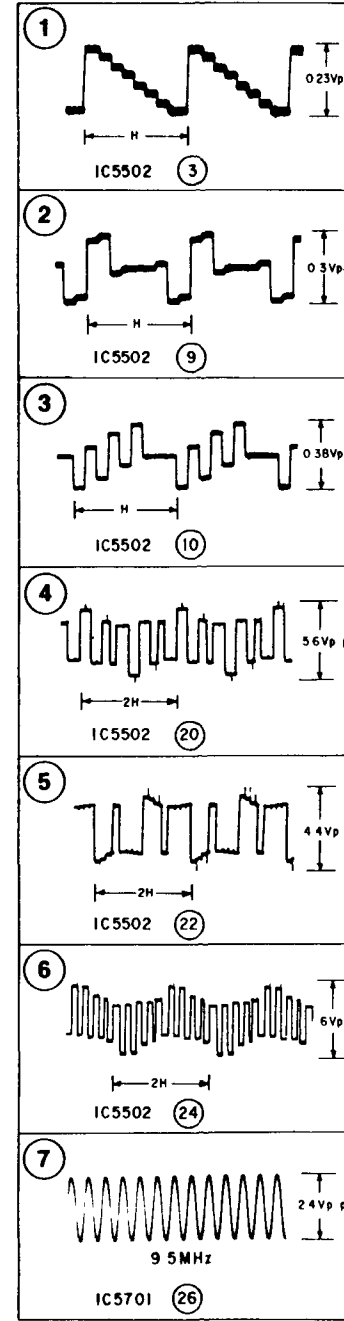
TO PD-85 BOARD(2/2)
TO CB-5B BOARD(3/6)
CN9923
(SEE PAGE 4-33)

* SIGNAL PATH

	VIDEO SIGNAL
	CHROMA Y Y/CHROMA
REC	→ →
PB	→ →



PD-85 BOARD (1/2)





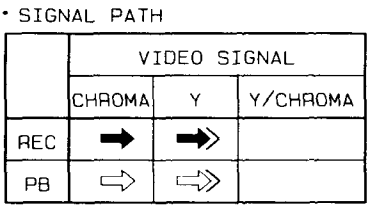
- This board is six-layer print board. However, the patterns of layers 2 to 5 have not been included in the diagram

- Chip transistor




L4401
L4402
L4403

– Ref No VF-115 BOARD 40,000 series –



Note

Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

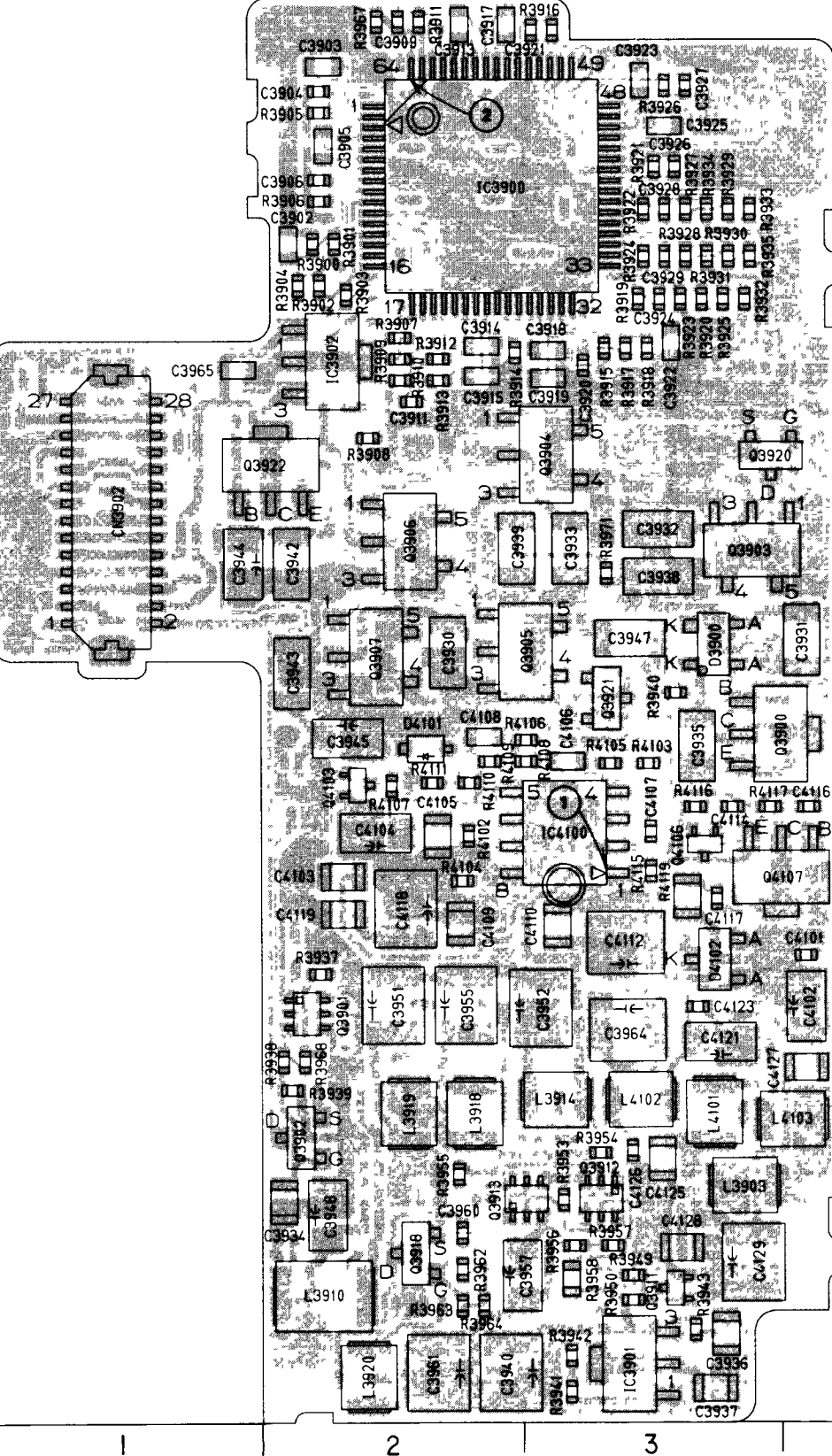
DD-96 (POWER, PANEL POWER) PRINTED WIRING BOARD

- Ref No DD-96 BOARD 30,000 series -

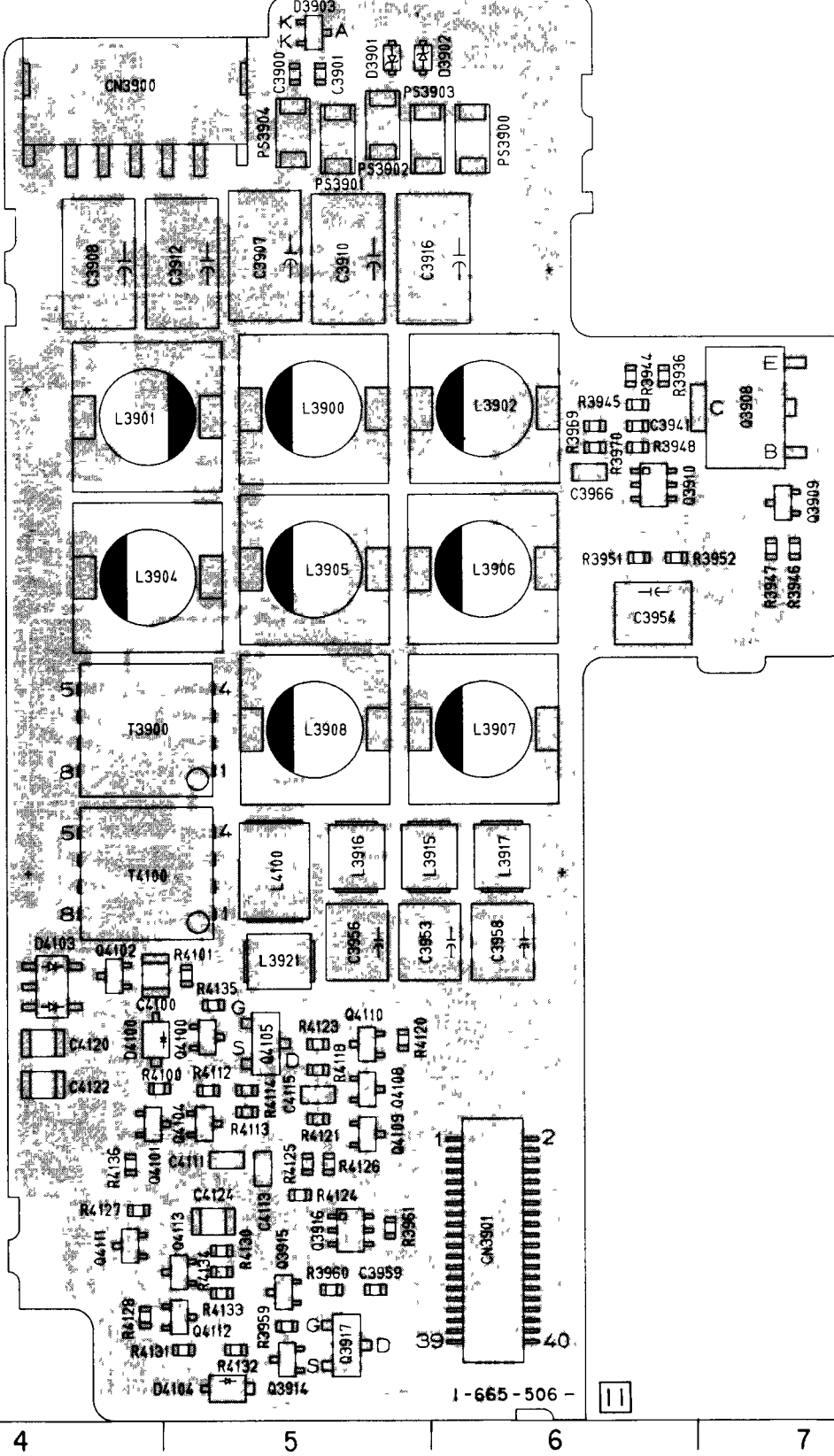
DD 96 BOARD

C3900 F-5	IC3901 A-3	R3935 E-3
C3901 F-5	IC3902 E-2	R3936 D-6
C3902 E-2	IC4100 C-3	R3937 B-2
C3903 F-2		R3938 B-2
C3904 F-2	L3900 D-5	R3939 B-2
C3905 E-2	L3901 D-4	R3940 C-3
C3906 E-2	L3902 D-6	R3941 A-3
C3907 E-5	L3903 A-3	R3942 A-3
C3908 E-4	L3904 D-4	R3943 A-3
C3909 E-4	L3905 D-6	R3944 D-6
C3910 E-5	L3906 D-6	R3945 D-6
C3911 D-2	L3907 C-6	R3946 D-7
C3912 E-2	L3908 C-7	R3947 D-7
C3913 F-2	L3910 A-2	R3948 A-2
C3914 E-2	L3914 B-3	R3949 A-3
C3915 E-2	L3915 D-3	R3950 A-3
C3916 E-5	L3916 C-5	R3951 D-5
C3917 F-2	L3917 C-6	R3952 D-6
C3918 E-3	L3918 B-3	R3953 A-3
C3919 D-3	L3919 B-2	R3954 B-3
C3920 D-3	L3920 A-2	R3955 A-2
C3921 E-3	L3921 B-3	R3956 A-3
C3922 E-3	L3962 B-5	R3957 A-3
C3923 F-3	L4100 C-5	R3958 A-3
C3924 E-3	L4101 B-3	R3959 A-3
C3925 B-3	L4102 B-3	R3960 A-6
C3926 E-3	L4103 B-4	R3961 A-5
C3927 F-3		R3962 A-5
C3928 E-3	P3900 E-6	R3963 A-3
C3929 E-3	P3901 E-6	R3964 A-2
C3930 C-2	P3902 E-6	R3967 A-2
C3931 C-4	P3903 E-6	R3968 B-2
C3932 D-3	P3904 E-6	R3969 D-6
C3933 D-3	Q3900 C-3	R3970 D-6
C3934 A-2	Q3901 B-2	R3971 D-3
C3935 C-3	Q3902 B-2	R4100 B-4
C3936 A-3	Q3903 D-3	R4101 B-5
C3937 D-3	Q3904 C-3	R4102 C-2
C3938 D-3	Q3905 C-2	R4103 C-3
C3939 D-2	Q3906 A-2	R4104 C-2
C3940 A-2	Q3907 C-2	R4105 C-3
C3941 D-6	Q3908 D-7	R4106 C-3
C3942 D-2	Q3909 D-7	R4107 C-2
C3943 C-2	Q3910 A-3	R4108 C-2
C3944 D-1	Q3911 A-3	R4109 C-2
C3945 C-2	Q3912 A-3	R4110 C-2
C3946 A-2	Q3913 A-3	R4111 C-2
C3947 A-3	Q3914 A-5	R4112 B-5
C3948 A-2	Q3915 B-5	R4113 B-5
C3949 A-5	Q3916 A-5	R4114 B-5
C3950 A-5	Q3917 A-5	R4115 C-3
C3951 A-5	Q3918 A-2	R4116 C-3
C3952 B-6	Q3919 A-5	R4117 C-3
C3953 B-6	Q3920 A-5	R4118 B-5
C3954 D-6	Q3921 C-3	R4119 B-5
C3955 B-6	Q3922 D-2	R4120 B-5
C3956 B-6	Q3923 A-5	R4121 B-5
C3957 A-3	Q3924 B-5	R4122 B-5
C3958 B-6	Q3925 A-5	R4123 B-5
C3959 A-5	Q4100 A-5	R4124 A-5
C3960 A-2	Q4101 B-4	R4125 A-5
C3961 A-2	Q4102 B-4	R4126 A-5
C3962 D-1	Q4103 C-2	R4127 A-5
C3963 D-6	Q4104 B-5	R4128 A-4
C4100 B-4	Q4105 B-5	R4129 A-4
C4101 B-4	Q4106 C-3	R4130 A-5
C4102 B-4	Q4107 C-3	R4131 A-5
C4103 C-2	Q4108 B-5	R4132 A-5
C4104 B-4	Q4109 B-5	R4133 A-5
C4105 C-3	Q4110 B-5	R4134 A-5
C4106 C-3	Q4111 A-4	R4135 B-4
C4107 C-3	Q4112 A-5	R4136 A-4
C4108 B-5	Q4113 A-5	
C4109 B-2		
C4110 B-3		
C4111 A-5	R3900 E-2	T3900 C-4
C4112 B-3	R3901 E-2	T4100 C-4
C4113 A-5	R3902 E-2	
C4114 C-3	R3903 E-2	
C4115 B-5	R3904 E-2	
C4116 C-4	R3905 E-2	
C4117 B-3	R3906 E-2	
C4118 B-2	R3907 E-2	
C4119 B-2	R3908 D-2	
C4120 B-4	R3909 E-2	
C4121 B-3	R3910 D-2	
C4122 B-4	R3911 F-2	
C4123 B-3	R3912 D-2	
C4124 A-5	R3913 D-2	
C4125 A-3	R3914 E-2	
C4126 B-3	R3915 E-2	
C4127 B-4	R3916 E-3	
C4128 A-3	R3917 E-3	
C4129 A-3	R3918 E-3	
	R3919 E-3	
	R3920 E-3	
	R3921 E-3	
	R3922 E-3	
	R3923 E-3	
	R3924 E-3	
	R3925 E-3	
	R3926 F-3	
	R3927 E-3	
	R3928 E-3	
	R3929 E-3	
	R3930 E-3	
	R3931 E-3	
	R3932 E-3	
	R3933 E-3	
	R3934 E-3	

DD-96 BOARD (SIDE B)



DD-96 BOARD (SIDE A)

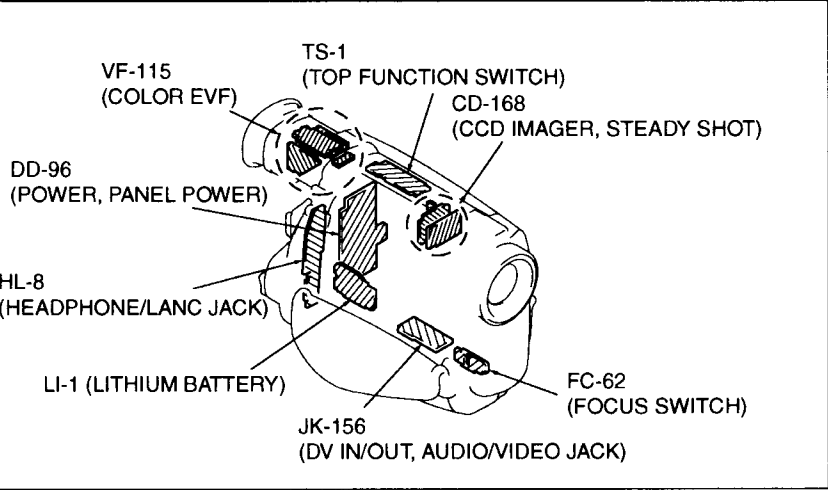
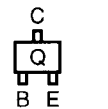


• For Printed Wiring Boards

- This board is six-layer print board. However, the patterns of layers 2 to 5 have not been included in the diagram.

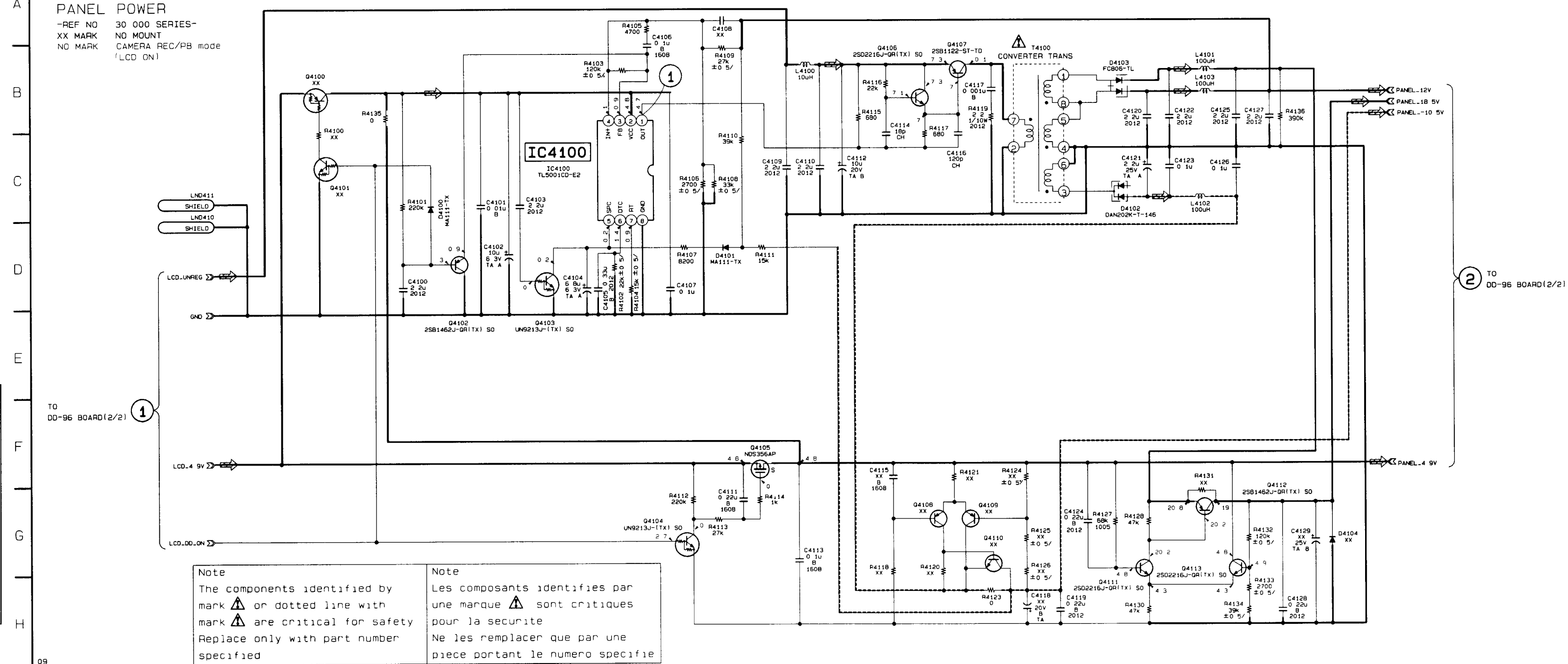
There are few cases that the part isn't mounted in this model is printed on this diagram.

• Chip transistor



DD-96 BOARD (1/2)

PANEL POWER
-REF NO 30 000 SERIES-
XX MARK NO MOUNT
NO MARK CAMERA REC/PB mode
(LCD ON)

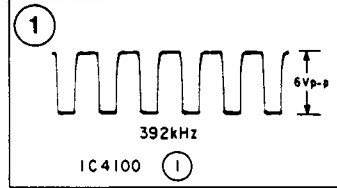


Note
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Note
Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

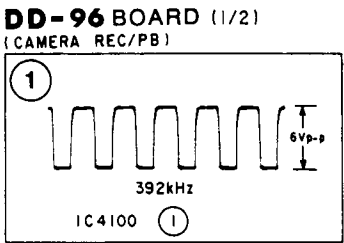
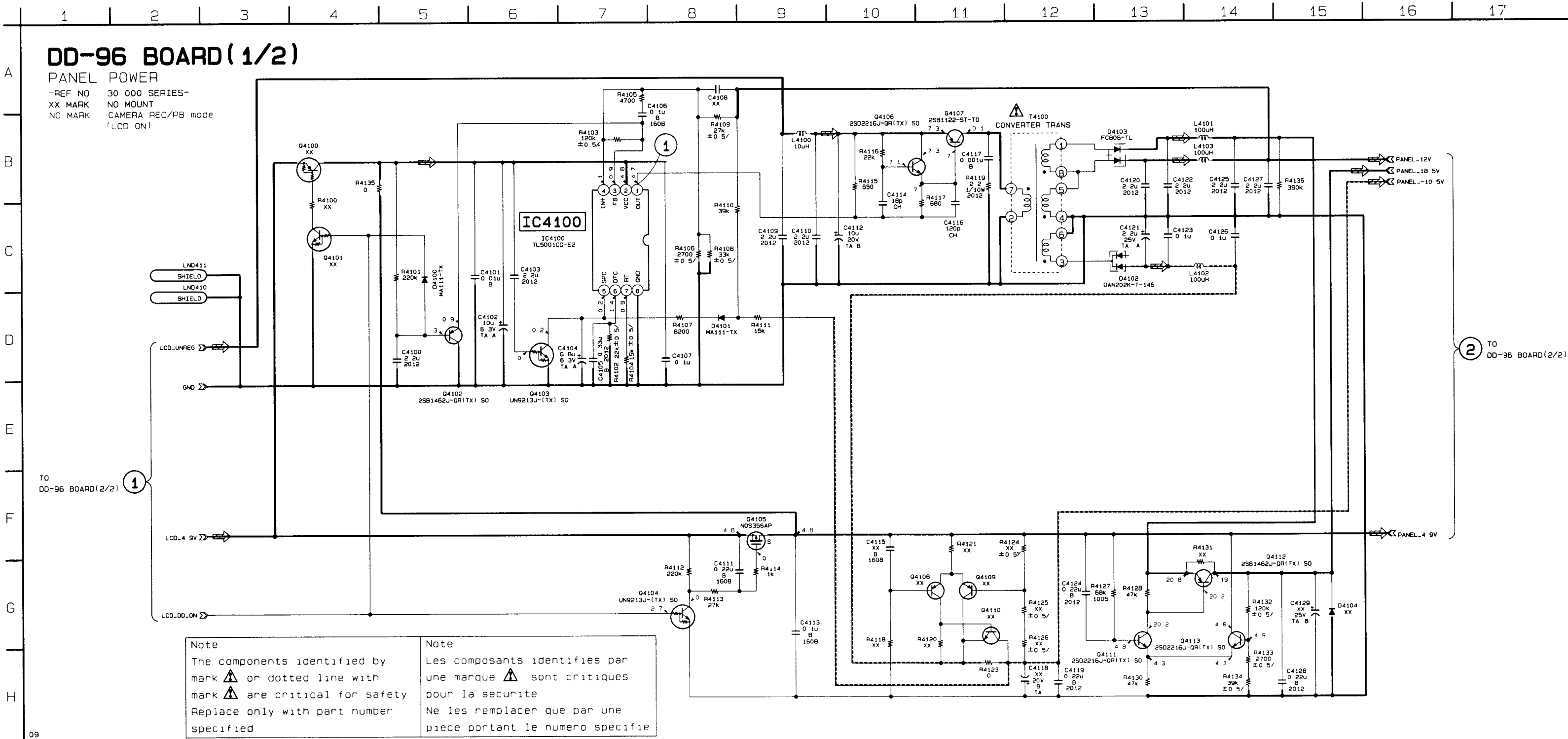
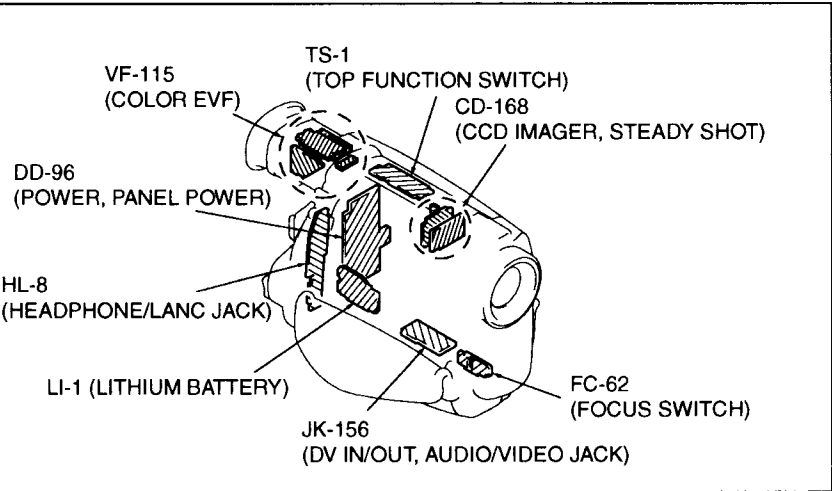
DD-96 BOARD (1/2)

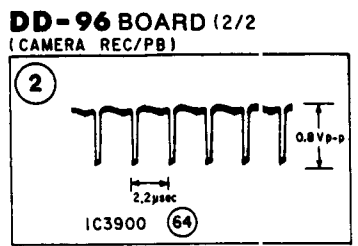
(CAMERA REC/PB)



- For Printed Wiring Boards
 - This board is six-layer print board. However, the patterns of layers 2 to 5 have not been included in the diagram
- There are few cases that the part isn't mounted in this model is printed on this diagram

• Chip transistor





SECTION 5 ADJUSTMENTS

5-1. CAMERA SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts beginning from page 5-30.

Note:

NTSC model : DCR-TRV7

PAL model : DCR-TRV7E

1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

1-1-1. List of Service Tools

- Oscilloscope
- Regulated power supply
- Color monitor
- Vectorscope
- Digital voltmeter

Ref No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	ND filter 1.0	J-6080-808-A	White balance check
	ND filter 0.3	J-6080-818-A	White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjusting remote commander (RM-95-remodeled partly) ^{Note 1}	J-6082-053-B	
J-6	Siemens star	J-6080-875-A	For checking the flange back
J-7	Clear chart for pattern box	J-6080-621-A	
J-8	CPC-8 jig	J-6082-388-A	For adjusting the video section For adjusting the viewfinder and LCD
J-9	Extension cable (40P, 0.5 mm—39P, 0.3 mm)	J-6082-387-A	For extension between the DD-96 board (CN3901) and the CB-58 board (CN9925)
J-10	Extension cable (28P, 0.8 mm)	J-6082-385-A	For extension between the DD-96 board (CN3902) and the RJ-74 board (CN9903)
J-11	Extension cable (80P, 0.5 mm)	J-6082-386-A	For extension between the RJ-74 board (CN9901) and the CB-58 board (CN9921)
J-12	IR receiver jig	J-6082-383-A	For adjusting the IR transmitter

Note 1: If the micro processor IC in the adjusting remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

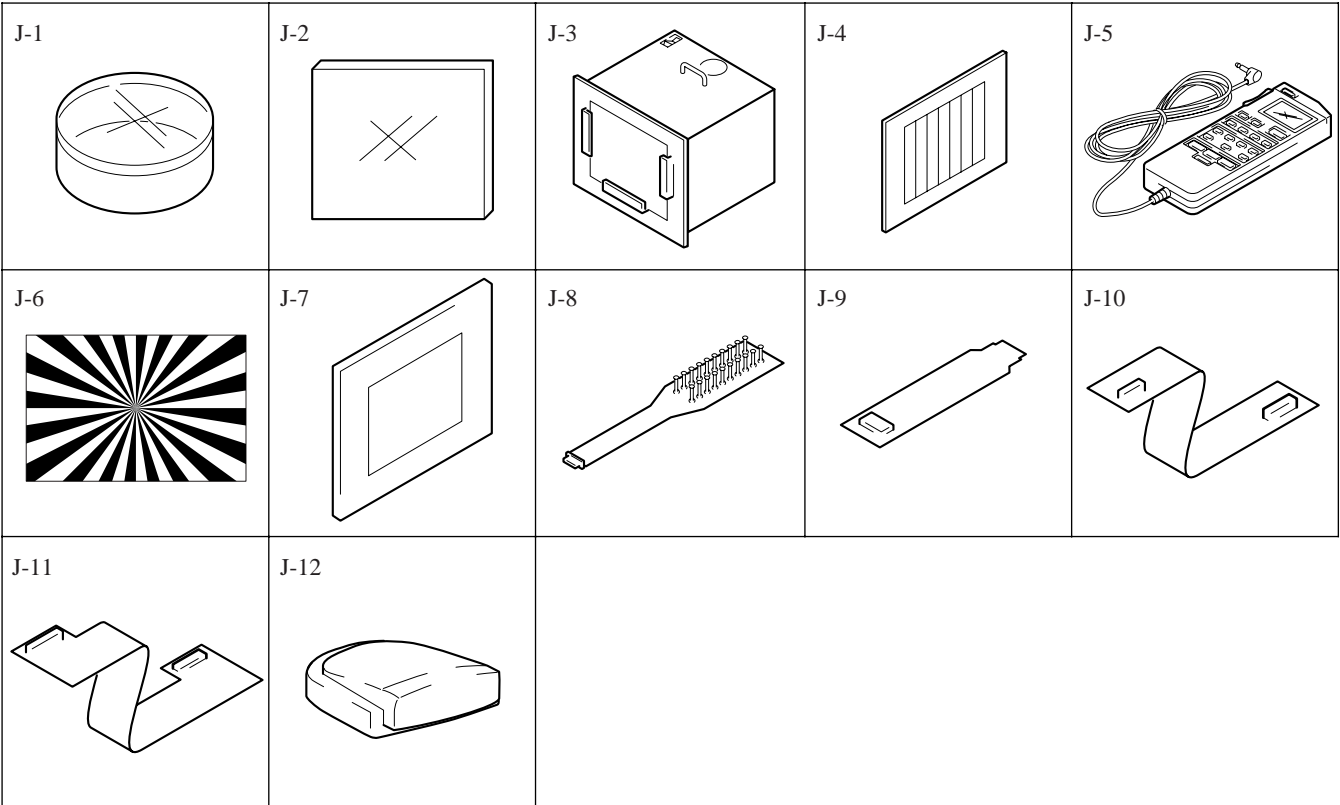


Fig. 5-1-1.

1-1-2. Preparations

Note 1: For details of how to remove the cabinet and boards, refer to “2. Removal”.

Note 2: When performing only the adjustments, the lens block and boards need not be disassembled. (except for the GUM PLL adjustment and the original oscillation adjustment)

- 1) Connect the equipment for adjustments according to Fig. 5-1-3.
- 2) The front panel block (MA-301 board) need not be assembled.
If removing it, remove the following connector.
 1. MA-301 board CN7001 (18P, 0.5 mm)

Note 3: As removing the cabinet (L) (CB-58 board CN9926) means removing the lithium 3V power supply, data such as date, time, user-set menus will be lost. After completing operations, reset these data. If the cabinet (L) has been removed, the self-diagnosis data, data on history of use (total drum rotation time) will be lost. Before removing, note down the self-diagnosis data and data of page: 2, address: 35 to 37. (Refer to the “Service Mode” for the data on the history of use.)

Note 4: Setting the “Forced Camera Power ON” Mode

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: 01 to page: D, address: 10, and press the PAUSE button of the remote commander.

The above procedure will enable the camera power to be turned on with the cabinet (L) removed. After completing operations, be sure to exit the “Forced Camera Power ON” mode.

Note 5: Exiting the “Forced Camera Power ON” Mode

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: 00 to page: D, address: 10, and press the PAUSE button of the remote commander.
- 3) Set data: 00 to page: 0, address: 01.

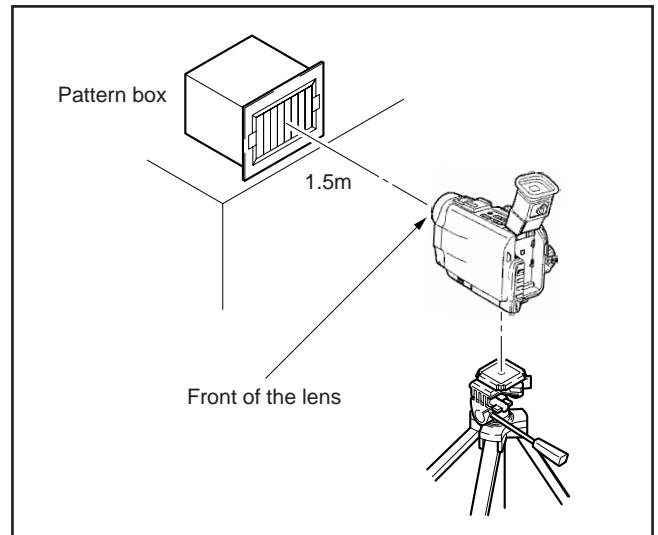


Fig. 5-1-2.

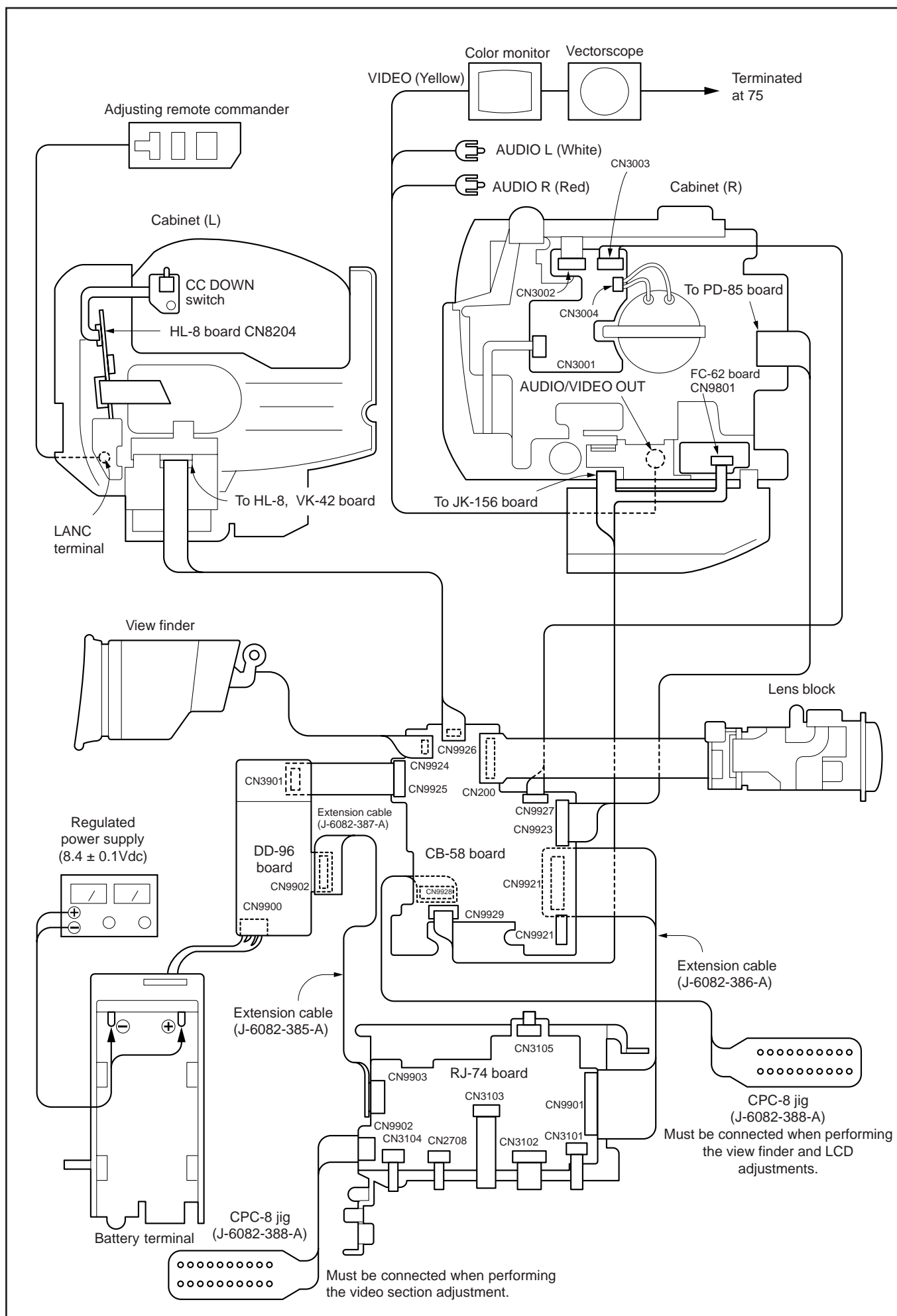


Fig. 5-1-3.

1-1-3. Precautions

1. Setting the Switches

Unless otherwise specified, set the switches as follows and perform adjustments without loading the cassette.

1. Camera/VTR (or Player) Power Switch (PS4810 block) Camera
2. Demo mode (Menu Screen) Off
3. Display (Menu Screen) V-OUT/LCD
4. Digital Zoom (Menu Screen) Off

5. STEADY SHOT Switch (Menu Screen) Off
6. Focus Switch (FC-62 board) Manual
7. Auto lock Switch (CK4810 block) On(Green)
8. Picture effect button (CK4810 block) Off
9. 16 : 9 WIDE Switch (Menu Screen) Off
10. Back light button (TS-1 board) Off

2. Order of Adjustments

Basically carry out adjustments in the order given.

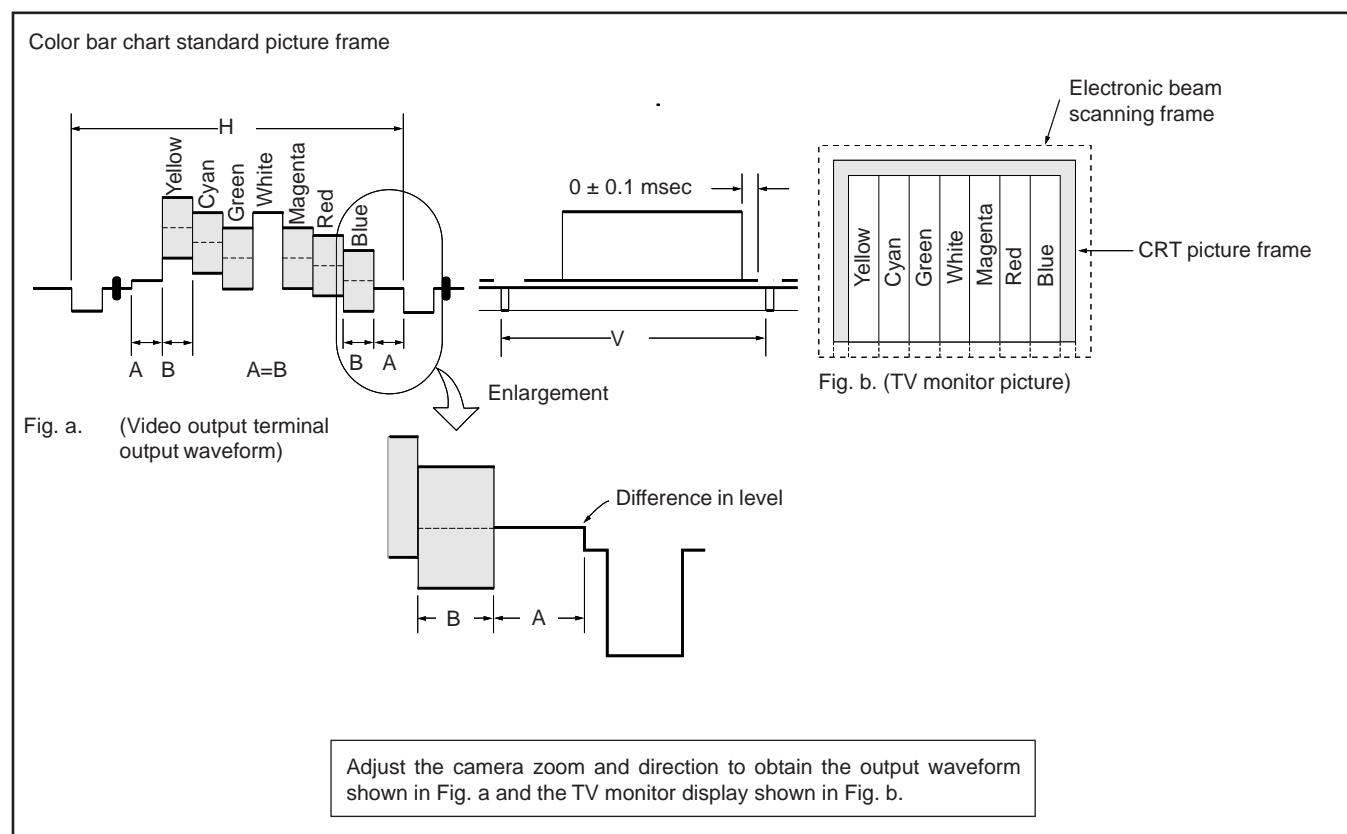


Fig. 5-1-4.

3. Subjects

- 1) Color bar chart (Standard image frame)
When performing adjustments using the color bar chart, adjust the image frame as shown in Fig. 5-1-4. (Standard image frame)
- 2) Clear chart (Standard image frame)
Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time.)
- 3) Flange back adjustment chart
Make the chart shown in Fig. 5-1-5 using A0 size (1189mm x 841 mm) black and white vellum paper.

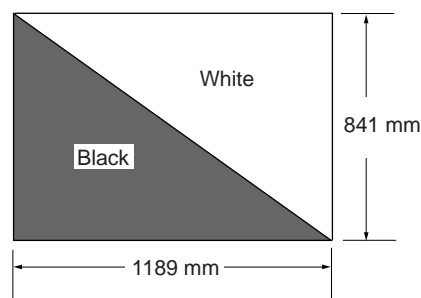


Fig. 5-1-5.

Note: Use matte vellum paper bigger than A0, and make sure the edges of the black and white paper joined together are not rough.

1-1-4. Page F Address

Note 1: The ← mark shown in the adjustment data memo column indicates that the address data is fixed and same as the initial value.

Note 2: The initial adjustment data value is the value after “Page F Data Initialization” and “Page F Data Modification” have been executed. It is different from the value after all adjustments have been executed.

Note 3: No mark : Common

() : AEP/UK model

[] : E/Tourist model

Address	Adjustment Data		
	NTSC	PAL	Memo Column
10	00	00	←
11	00	00	←
12	7D	7D	←
13	20	30	←
14	00	02	←
15	02	02	←
16	3B	3B	
17	00	00	←
18	7C	7C	←
19	80	80	←
1A	1F	1F	←
1B	43	(40)[43]	←
1C	A9	A9	
1D	2E	2E	←
1E	80	80	
1F	80	80	
20	B4	B4	
21	55	55	
22	86	86	
23	7B	7B	
24	4A	4A	
25	15	15	
26	90	90	
27	19	19	
28	84	84	
29	13	13	
2A	00	00	←
2B	00	00	←
2C	40	40	
2D	1B	1B	
2E	1B	1B	
2F	AE	AE	
30	42	42	
31	44	44	
32	34	34	
33	3C	3C	
34	89	89	
35	59	59	
36	38	38	
37	41	41	

Table 5-1-1 (1).

Address	Adjustment Data		
	NTSC	PAL	Memo Column
38	20	20	
39	00	00	
3A	19	19	
3B	00	00	
3C	1D	1C	
3D	00	00	←
3E	00	00	←
3F	00	00	←
40	00	00	←
41	60	60	
42	60	60	
43	00	00	←
44	00	00	←
45	00	00	←
46	42	42	←
47	4E	4E	←
48	44	44	←
49	41	41	←
4A	44	44	←
4B	04	04	←
4C	00	00	←
4D	7A	7A	
4E	00	00	←
4F	10	10	←
50	00	02	←
51	39	29	←
52	8C	8C	←
53	1D	0F	
54	41	41	←
55	16	16	←
56	77	77	←
57	40	40	←
58	75	75	←
59	83	83	←
5A	89	89	←
5B	A9	A9	←
5C	A5	A5	←
5D	68	68	←
5E	6C	6C	←
5F	00	00	←
60	4A	4A	←
61	F0	F0	←
62	00	00	←
63	00	00	←
64	27	27	←
65	D2	D2	←
66	00	00	←

Table 5-1-1 (2).

Address	Adjustment Data		
	NTSC	PAL	Memo Column
67	40	40	←
68	5F	5F	←
69	FF	FF	←
6A	C2	C2	←
6B	1B	1B	←
6C	E8	E0	←
6D	A0	A0	←
6E	30	28	←
6F	20	1A	←
70	C0	C0	←
71	64	64	←
72	4C	4C	←
73	55	55	←
74	55	55	←
75	66	84	←
76	25	25	←
77	34	34	←
78	3F	3F	←
79	60	60	←
7A	1F	1F	←
7B	40	40	←
7C	80	78	←
7D	41	41	←
7E	02	02	←
7F	24	24	←
80	08	08	←
81	0F	0F	←
82	15	15	←
83	1D	1D	←
84	23	23	←
85	28	28	←
86	2A	2A	←
87	2F	2F	←
88	32	32	←
89	39	39	←
8A	40	40	←
8B	02	02	←
8C	0C	0C	←
8D	00	00	←
8E	80	80	←
8F	FD	FE	
90	F0	EE	
91	27	27	←
92	3E	3C	←
93	FE	FE	←
94	3C	3C	←
95	24	24	←

Table 5-1-1 (3).

Address	Adjustment Data		
	NTSC	PAL	Memo Column
96	83	83	←
97	20	20	←
98	67	67	←
99	4A	4A	←
9A	33	33	←
9B	5C	5C	←
9C	5C	5C	←
9D	5C	5C	←
9E	3C	3C	←
9F	0F	0F	←
A0	10	10	←
A1	2C	2C	←
A2	0A	0A	←
A3	36	36	←
A4	72	72	←
A5	46	46	←
A6	A0	C0	←
A7	50	50	←
A8	1E	1E	←
A9	0F	0F	←
AA	E8	E8	←
AB	90	90	←
AC	05	05	←
AD	D0	D0	←
AE	01	01	←
AF	0A	0A	←
B0	02	02	←
B1	04	04	←
B2	78	78	←
B3	3B	3B	←
B4	A0	A0	←
B5	00	00	←
B6	02	02	←
B7	F3	F3	←
B8	80	80	←
B9	4F	4F	←
BA	89	89	←
BB	17	17	←
BC	51	51	←
BD	5F	5F	←
BE	68	68	←
BF	93	93	←
C0	AA	AA	←
C1	65	65	←
C2	44	44	←
C3	A2	A2	←
C4	64	64	←

Table 5-1-1 (4).

Address	Adjustment Data		
	NTSC	PAL	Memo Column
C5	90	90	←
C6	33	33	←
C7	15	15	←
C8	82	82	←
C9	00	00	←
CA	F3	F3	←
CB	EE	EE	←
CC	0E	0E	←
CD	D8	D8	←
CE	0A	0A	←
CF	2A	2A	←
D0	E6	E6	←
D1	41	41	←
D2	02	02	←
D3	54	54	←
D4	14	14	←
D5	64	64	←
D6	15	15	←
D7	A4	A4	←
D8	80	80	←
D9	80	80	←
DA	17	17	←
DB	00	00	←
DC	00	00	←
DD	00	00	←
DE	00	00	←
DF	10	10	←
E0	40	40	←
E1	60	60	←
E2	02	02	←
E3	00	00	←
E4	00	00	←
E5	10	10	←
E6	20	20	←
E7	0A	0A	←
E8	22	22	←
E9	08	07	←
EA	00	00	←
EB	00	00	←
EC	00	00	←
ED	14	14	←
EE	10	10	←
EF	00	00	←
F0	00	00	←
F1	00	00	←
F2	0E	0E	←
F3	00	00	←

Table 5-1-1 (5).

Address	Adjustment Data		
	NTSC	PAL	Memo Column
F4	20	20	←
F5	14	14	←
F6	00	00	←
F7	00	00	←
F8	03	03	←
F9	A0	A0	←
FA	C3	C3	←
FB	00	00	←
FC	00	00	←
FD	00	00	←
FE	00	00	←
FF	00	00	←

Table 5-1-1 (6).

1-2. CAMERA SYSTEM ADJUSTMENTS

Note: Check that the following adjustment has been completed before performing “Camera Check Adjustments”.

1. “Initializing the Page D Data” and “Changing the Page D Data” of “System Control System Adjustments” of “Video Section Adjustments”.
2. “Base Band Block Adjustment” and “Clock Adjustment” of “Video System Adjustments” of “Video Section Adjustments”.

1. Initializing the Page F Data

Note: If the page F data is initialized, all adjustments in “Camera System Adjustments” must be performed again.

Adjusting Page	F
Adjusting Address	00 to FF

Initializing Method:

- 1) Set data: 01 to page: 6, address: 00.
- 2) Set data: 2D (NTSC) or data: 2F (PAL) to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 01 to page: 6, address: 03, and press the PAUSE button of the adjusting remote commander.
- 4) Check that the data of page: 6, address: 02 is 01.
- 5) Set data: 00 to page: 6, address: 00.
- 6) Turn OFF the main power (8.4V).
- 7) Perform “Changing the Page F Data”.

2. Changing the Page F Data

If the page F data has been initialized, change the data as shown in the following table by manual input.

Note 1: Before changing the data, set data: 01 to page: 6, address: 00.

Note 2: When changing the data, press the PAUSE button of the adjusting remote commander each time when setting new data to write the data in the non-volatile memory.

Note 3: After changing the data, set data: 00 to page: 6, address: 00. Also perform the next camera system adjustment.

Note 4: No mark : Common
() : AEP/UK model
[] : E/Tourist model

Address	DATA	
	NTSC	PAL
1B	43	(40)[43]
45	00	00
46	42	42
47	4E	4E
48	44	44
49	41	41
4B	04	04
50	00	02
53	1D	0F
58	75	75
5A	89	89
5B	A9	A9
65	D2	D2
75	66	84
76	25	25
7C	80	78
8B	02	02
8C		0C
8E		80
8F	FD	FE
90	F0	EE
91	27	27
92	3E	3C
A6	A0	C0
CB	EE	EE
CC	0E	0E
CE	0A	0A
D1	41	41
D2	02	02
D3	54	54
D4	14	14
D5	64	64
D6	15	15
D7	A4	A4
F8		03
F9	A0	A0
FA	C3	C3

3. GUM PLL Adjustment (CB-58 Board)

Subject	Arbitrary
Measurement Point	CL207 (C288 ⊕)
Measuring Instrument	Digital voltmeter
Adjustment Page	F
Adjustment Address	4D
Specified Value	1.75 ± 0.05 Vdc

Adjusting method:

- 1) Set data: 01 to page: 6, address: 00.
- 2) Change the data of page: F, address: 4D, and set the DC voltage to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Set data: 00 to page: 6, address: 00.

4. Original Oscillation Adjustment (CB-58 Board)

Subject	Arbitrary
Measurement Point	Pin ② of IC200 (CL200)
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	1C
Specified Value	f = 18000000 ± 90Hz (NTSC) f = 18000000 ± 90Hz (PAL)

Adjusting method:

- 1) Set data: 01 to page: 6, address: 00.
- 2) Change the data of page: F, address: 1C, and set the clock frequency (f) to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Set data: 00 to page: 6, address: 00.

5. HALL Adjustment

For detecting the position of the lens iris, adjust the hall AMP gain and hall offset.

Subject	Not required
Measurement Point	DDS display data of EVF, LCD or
Measuring Instrument	TV monitor (Note 3)
Adjustment Page	F
Adjustment Address	1E, 1F
Specified Value	15 to 19 during IRIS OPEN (Note 1) 81 to 85 during IRIS CLOSE (Note 2)

Note 1: Set data: 01 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.

Note 2: Set data: 03 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.

Note 3: DDS display data of EVF, LCD or TV monitor.

CA 00 00XX
└─ Object data

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: 02 to page: D, address: 11, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 01 to page: 6, address: 00.
- 4) Set data: 03 to page: 6, address: 04.
- 5) Set data: 03 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 6) Set data: 80 to page: F, address: 1F, and press the PAUSE button of the adjusting remote commander.
- 7) Set data: 40 to page: F, address: 1E, and press the PAUSE button of the adjusting remote commander.
- 8) Read the DDS display data (the bottom two digits of the display data at the bottom right of the EVF or the LCD display or the TV monitor), and this data is named W2.
- 9) Set data: 30 to page: F, address: 1E, and press the PAUSE button of the adjusting remote commander.
- 10) Read the DDS display data, and this data is named W1.
- 11) Set data: 01 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 12) Read the DDS display data, and this data is named K1.
- 13) Set data: 40 to page: F, address: 1E, and press the PAUSE button.
- 14) Read the DDS display data, and this data is named K2.
- 15) Convert W1, W2, K1, K2 to decimal notation, and obtain W1', W2', K1', K2'. (Refer to Table 5-4-2. "Hexadecimal notation-decimal notation conversion table" of "Service mode".)
- 16) Calculate X1' using the following equations (decimal notation calculation).

$$A' = W2' + K1' - W1' - K2' \dots\dots\dots \text{Equation 1}$$

$$B' = W1' - K1' \dots\dots\dots \text{Equation 2}$$

$$X1' = \frac{1728 + (48 \times A') - (16 \times B')}{A'} \dots\dots\dots \text{Equation 3}$$
- 17) Convert X1' to hexadecimal notation, and obtain X1.
(Round off to one decimal place)
- 18) Set data: X1 to page: F, address: 1E, and press the PAUSE button of the adjusting remote commander.
- 19) Change the data of page: F, address: 1F, and adjust the DDS display data to "17".

- 20) Press the PAUSE button of the adjusting remote commander.
- 21) Set data: 03 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 22) Read the DDS display data, and this data is named W0. If W0 lies within the "81" to "85" range, perform "Processing after completing adjustments". If it lies outside the range, perform the following adjustments.
- 23) Convert W0 to decimal notation, and obtain W0'.
- 24) Calculate X2' using the following equations (decimal notation calculation).

$$C' = W0' - B' - 23 \dots\dots\dots \text{Equation 4}$$

$$X2' = \frac{(108 - B') \times (X1' - 48) + 48 \times C'}{C'} \dots\dots\dots \text{Equation 5}$$

(X1' and B' are values obtained from equations 2) and 3)
- 25) Convert X2' to hexadecimal notation and obtain X2.
(Round off to one decimal place)
- 26) Set data X2 to page: F, address: 1E, and press the PAUSE button of the adjusting remote commander.
- 27) Change the data of page: F, address: 1F, and adjust the DDS display data to "83".
- 28) Press the PAUSE button of the adjusting remote commander.
- 29) Set data: 01 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 30) Check that the DDS display data lies within the "15" to "19" range.

Processing after Completing Adjustments

- 1) Set data: 00 to page: D, address: 11, and press the PAUSE button of the adjusting remote commander.
- 2) Set data: 00 to page: 0, address: 01.
- 3) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 4) Set data: 00 to page: 6, address: 04.
- 5) Set data: 00 to page: 6, address: 00.

6. Flange Back Adjustment

The inner focus lens flange back adjustment is carried out automatically.

6-1. Flange Back Adjustment (1)

Subject	Flange back adjustment chart (2.0 m from the front of the lens) (Luminance: 200 ± 50 lux)
Measurement Point	Check operations on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	24 to 29, 38 to 3C

Adjusting method:

- 1) Check that at both the zoom lens TELE terminal and WIDE terminal, the center of the chart for the flange back adjustment and center of the exposure screen coincide.
- 2) Set data: 01 to page: 6, address: 00.
- 3) Check that the data of page: F, address: 24 to 29, 38 to 3B is the initial value (see table below).

Address	Data	Address	Data
24	4A	38	20
25	15	39	00
26	90	3A	19
27	19	3B	00
28	84	3C	1D (NTSC),
29	13		1C (PAL)

- 4) Check that the data of page: 6, address: 02 is 00.
- 5) Set data: 13 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 6) Set data: 15 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
(The adjustment data will be automatically input to page: F, address: 24 to 29, 38 to 3C.)
- 7) Check that the data of page: 6, address: 02 is "01".

Processing after Completing Adjustments

- 1) Turn OFF the main power supply (8.4V)
- 2) Perform "Flange Back Adjustment (2)".

6-2. Flange Back Adjustment (2)

Perform this adjustment after performing “Flange Back Adjustment (1)”.

Subject	Subject more than 500m away (Subjects with clear contrast such as buildings, etc.)
Adjustment Page	F
Adjustment Address	24 to 29, 38 to 3C

Adjusting Method:

- 1) Set the IRIS to open. (Use a ND filter)
- 2) Set the zoom lens to the TELE end and expose a subject that is more than 500 m away (subjects with clear contrast such as buildings, etc.). (Nearby subjects less than 500 m away should not be in the screen.)
- 3) Set data: 01 to page: 6, address: 00.
- 4) Check that the data of page: 6, address: 02 is “00”.
- 5) Set data: 13 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 6) Set data: 29 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
(Adjustment data will automatically be input to page: F, addresses: 24 to 29, 38 to 3C.)
- 7) Check that the data of page: 6, address: 02 is “01”.

Processing after Completing Adjustments

- 1) Set data: 00 to page: 6, address: 00.
- 2) Turn OFF the main power supply (8.4V).
- 3) Perform “Flange Back Check”.

7. Flange Back Check

Subject	Siemens star 2.0m from the front of the lens Luminance: approx. 200 lux
Measurement Point	Check the operation on the TV monitor
Measuring Instrument	
Specified Value	Focused at the TELE end and WIDE end.

Switch setting:

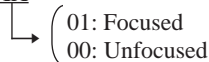
- 1) STEADY SHOT (Menu display) OFF
- 2) DIGITAL ZOOM (Menu display) OFF

Checking method:

- 1) Place the Siemens star 2.0m from the front of the lens.
- 2) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appears on the image.
- 3) Shoot the siemens star with the zoom TELE end.
- 4) Turn on the auto focus.
- 5) Check that the lens is focused (Note 1), and turn off the auto focus
- 6) Set data: 10 to page: 6, address: 21.
- 7) Shoot the siemens star with the zoom WIDE end.
- 8) Observe the TV monitor and check that the lens is focused.

Note 1: When the auto focus is ON, the lens can be checked if it is focused or not by observing the data on page A of the adjusting remote commander.

- 1) Set data: 0F to page: 6, address: 04.
- 2) Page A shows the state of the focus.

A : 00 : XX


Processing after Completing Adjustments

- 1) Set data: 00 to page: 6, address: 21.
- 2) Set data: 00 to page: 6, address: 04.

8. Picture Frame Setting

Subject	Color bar chart standard picture frame (1.5m from the front of the lens)
Measurement Point	Video output terminal of AUDIO VIDEO OUT jack
Measuring Instrument	Oscilloscope and TV monitor.
Specified Value	$A = B, C = D, t = 0 \pm 0.1 \text{ msec}$

Setting method:

- 1) Adjust the zoom and the camera direction, and set to the specified position.
- 2) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using “color bar chart standard picture frame”.

Check on the oscilloscope

1. horizontal period

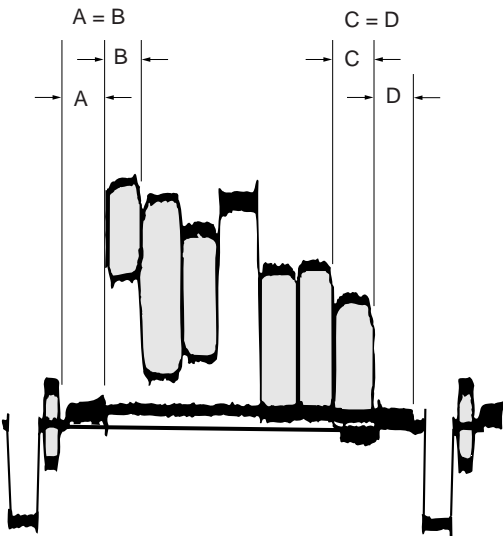


Fig. 5-1-6.

2. Vertical period

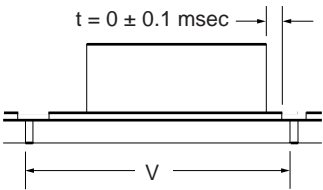


Fig. 5-1-7.

Check on the TV monitor

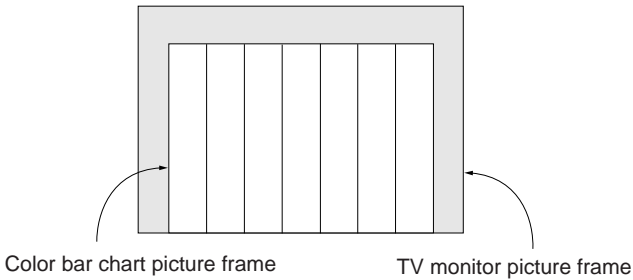


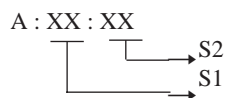
Fig. 5-1-8.

9. G-CAM flip Discrimination Adjustment

Sets the color reproduction conditions to optimum.

Subject	Color bar chart standard picture frame
Measuring point	Display data of page A of the adjusting remote commander (Note 1)
Measuring instrument	
Adjusting page	F
Adjusting address	53

Note 1: Displayed data of page A of the adjusting remote commander



Adjusting method

- 1) Set data: 01 to page: 6, address: 00.
- 2) Set data: 01 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 16 to page: 6, address: 04.
- 4) Set data: 1D (NTSC) or data: 0F (PAL) to page: F, address: 53, and press the PAUSE button of the adjusting remote commander.
- 5) Select page A of the adjusting remote commander, and compare the higher 2 digits (S1) and lower 2 digits (S2) of the 4-digit display data.
[When $S1 < S2$]
Perform steps 6 onwards.
[When $S1 \geq S2$]
Perform steps 7 onwards.
- 6) Set data: 9D (NTSC) or data: 8F (PAL) to page: F, address: 53, and press the PAUSE button of the adjusting remote commander.
- 7) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 8) Set data: 00 to page: 6, address: 04.
- 9) Set data: 00 to page: 6, address: 00.

10. Color Reproduction Adjustment

Adjust the color separation matrix coefficient so that the proper color reproduction is produced.

Subject	Color bar chart standard picture frame
Measurement Point	Video output terminal of AUDIO / VIDEO OUT jack
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	2E, 30, 8F, 90
Specified Value	All color luminance points should settle within each color reproduction frame.

Note: NTSC model: DCR-TRV7

PAL model: DCR-TRV7E

Adjusting method:

- 1) Set data: 01 to page: 6, address: 00.
- 2) Set data: 3D to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 3F to page: F, address: 16, and press the PAUSE button of the adjusting remote commander.
- 4) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
- 5) Change the data of addresses 2E, 30, 8F and 90 of page: F, and settle each color luminance point in each color reproduction frame.

Note 1: Be sure to press the PAUSE button of the adjusting remote commander before changing the addresses.

If not, the new data will not be written to the memory.

- 6) Press the PAUSE button of the adjusting remote commander.

Processing after Completing Adjustments

- 1) Set data: 00 to page: 6, address: 01 and press the PAUSE button of the adjusting remote commander.
- 2) Set data: 00 to page: 6, address: 00.

For NTSC model

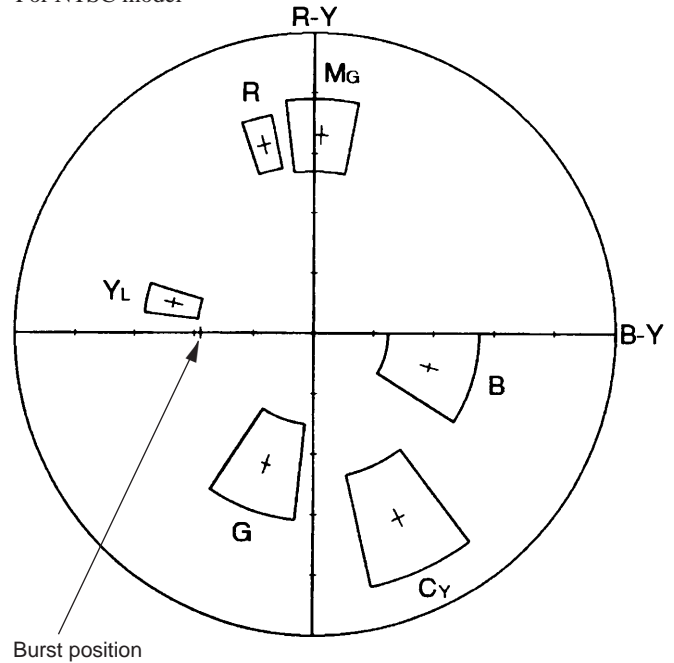


Fig. 5-1-9.

For PAL model

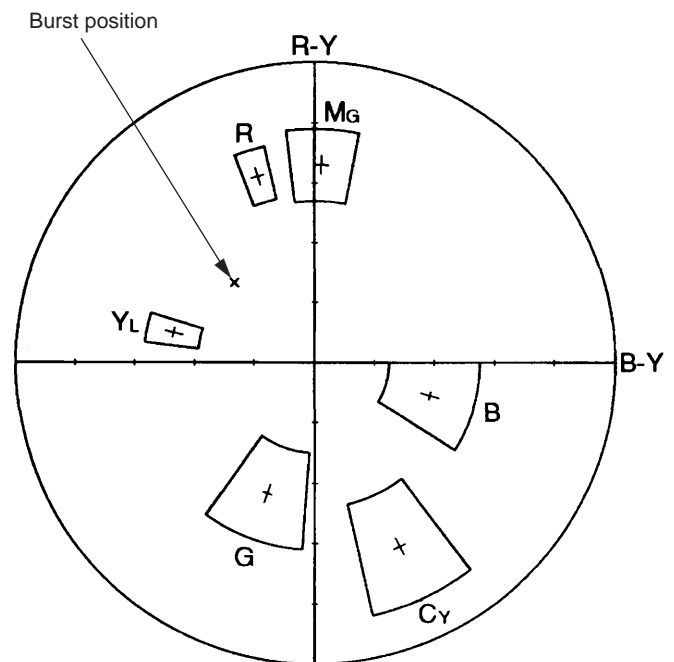


Fig. 5-1-10.


11. IRIS IN/OUT Adjustment

For the unit to judge if the white balance is indoors or outdoors in auto white balance operations, measure the light level and write it in the EEPROM.

If the level is not correct, the white balance will not be accurate.

Subject	Clear chart (Color bar standard picture frame)
Measurement Point	DDS display of EVF, LCD or TV monitor
Measuring Instrument	(Note 1)
Adjustment Page	F
Adjustment Address	36, 37

Note 1: The right four digits of the display data at the right bottom side of the EVF, LCD and TV monitor is the LIGHT LEVEL data.

CA 00 XXXX

 → Lower two digits
 → Upper two digits

Switch setting:

- 1) STEADY SHOT (Menu display) OFF

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: 02 to page: D, address: 11, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 01 to page: 6, address: 00.
- 4) Set data: 06 to page: 6, address: 04.
- 5) Set data: 02 to page: 6, address: 40.
- 6) Set data: 0B to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 7) Read the DDS display data (Note 1), and take the upper two digits as D1 and the lower two as D2.
- 8) Convert D1 to a decimal number and obtain D1'. (Refer to Table 5-4-2. "Hexadecimal Notation-Decimal Notation Conversion Table" of "Service mode".)
- 9) Calculate D3' using the following equations. (Equations 1 and 2 are for decimal notation calculation)
 When $D2 \geq D0$

$$D3' = D1' - 21 \quad \text{Equation 1}$$

 When $D2 < D0$

$$D3' = D1' - 22 \quad \text{Equation 2}$$
- 10) Convert D3' to a hexadecimal number and obtain D3.
- 11) Set D3 to page: F, address: 36, and press the PAUSE button of the adjusting remote commander.
- 12) Set data: 09 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 13) Read the DDS display data (Note 1), and take the upper two digits as D4 and the lower two as D5.
- 14) Convert D4 to a decimal number and obtain D4'. (Refer to Table 5-4-2. "Hexadecimal Notation-Decimal Notation Conversion Table" of "Service mode".)
- 15) Calculate D6' using the following equations. (Equations 3 and 4 are for decimal notation calculation)
 When $D5 \geq F0$

$$D6' = D4' - 13 \quad \text{Equation 3}$$

 When $D5 < F0$

$$D6' = D4' - 14 \quad \text{Equation 4}$$

- 16) Convert D6' to a hexadecimal number and obtain D6.

- 17) Set D6 to page: F, address: 37, and press the PAUSE button of the adjusting remote commander.

Processing after Completing Adjustments

- 1) Set data: 00 to page: D, address: 11, and press the PAUSE button of the adjusting remote commander.
- 2) Set data: 00 to page: 0, address: 01.
- 3) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 4) Set data: 00 to page: 6, address: 40.
- 5) Set data: 00 to page: 6, address: 04.
- 6) Set data: 00 to page: 6, address: 00.

12. MAX GAIN Adjustment

Setting the minimum illumination.

If it is not consistent, the image level required for taking subjects in low illuminance will not be produced (dark).

Subject	Clear chart (Color bar standard picture frame)
Measurement Point	DDS display of EVF, LCD or TV monitor
Measuring Instrument	(Note 1)
Adjustment Page	F
Adjustment Address	2C
Specified Value	70 to 78 (NTSC) 6C to 74 (PAL)

Note 1: The right two digits of the display data at the right bottom side of the EVF, LCD and TV monitor is the object data.

CA 00 00XX
└─> Object data

Switch setting:

- 1) STEADY SHOT (Menu display) OFF

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: 02 to page: D, address: 11, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 01 to page: 6, address: 00.
- 4) Set data: 01 to page: 6, address: 04.
- 5) Set data: 02 to page: 6, address: 40.
- 6) Set data: 40 to page: 6, address: 56.
- 7) Set data: 19 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 8) Change the data of page: F, address: 2C and adjust so that the DDS display data (Note 1) lies within the specified value.
- 9) Press the PAUSE button of the adjusting remote commander.

Processing after Completing Adjustments

- 1) Set data: 00 to page: D, address: 11, and press the PAUSE button of the adjusting remote commander.
- 2) Set data: 00 to page: 0, address: 01.
- 3) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 4) Set data: 00 to page: 6, address: 40.
- 5) Set data: 00 to page: 6, address: 56.
- 6) Set data: 00 to page: 6, address: 04.
- 7) Set data: 00 to page: 6, address: 00.

13. Auto White Balance Standard Data Input

Subject	Clear chart (Color bar standard picture frame)
Adjustment Page	F
Adjustment Address	20 to 23

Note 1: Perform “Color Reproduction Adjustment” before this adjustment.

Note 2: Check that the data of page: 6, address: 02 is 00.
If not, turn the power of the unit OFF/ON.

Adjusting method:

- 1) Set data: 01 to page: 6, address: 00.
- 2) Wait for 2 seconds.
- 3) Set data: 11 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 4) Set data: 0D to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
(When the standard data is taken in, the data will be automatically input to addresses 20 to 23 of page F.)
- 5) Check that the data of page: 6, address: 02 is 01.
- 6) Perform “Auto White Balance Adjustment”.

Processing after Completing Adjustments

- 1) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 2) Set data: 00 to page: 6, address: 00.

14. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.

If it is not correct, auto white balance and color reproducibility will be poor.

Subject	Clear chart (Color bar standard picture frame)
Filter	Filter C14 for color temperature correction
Measurement Point	DDS display of EVF, LCD or TV monitor
Measuring Instrument	(Note 1)
Adjustment Page	F
Adjustment Address	34, 35
Specified Value	R ratio: 2C40 to 2CC0 B ratio: 6040 to 60C0

Note 1: Perform “Auto White Balance Standard Data Input” before this adjustment.

Note 2: The right four digits of the display data at the right bottom side of the EVF, LCD and the TV monitor is the object data.

CA 00 XXXX
 └─> Object data

Adjusting method:

- 1) Place the C14 filter for color temperature correction on the lens.
- 2) Set data: 01 to page: 0, address: 01.
- 3) Set data: 02 to page: D, address: 11, and press the PAUSE button of the adjusting remote commander.
- 4) Set data: 01 to page: 6, address: 00.
- 5) Set data: 3F to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 6) Set data: 04 to page: 6, address: 04.
- 7) Change the data of page: F, address: 34, and adjust the average value of the DDS display data (the display data at the bottom right of the LCD, EVF or the TV monitor) to the R ratio specified value.
- 8) Press the PAUSE button of the adjusting remote commander.
- 9) Set data: 05 to page: 6, address: 04.
- 10) Change the data of page: F, address: 35, and adjust the average value of the DDS display data to the B ratio specified value.
- 11) Press the PAUSE button of the adjusting remote commander.

Processing after Completing Adjustments

- 1) Set data: 00 to page: D, address: 11, and press the PAUSE button of the adjusting remote commander.
- 2) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 00 to page: 6, address: 04.
- 4) Set data: 00 to page: 6, address: 00.
- 5) Set data: 00 to page: 1, address: 00.

15. White Balance Check

Subject	Clear chart (Color bar standard picture frame)
Filter	Filter C14 for color temperature correction ND filter 1.0 and 0.3
Measurement Point	AUDIO VIDEO OUT terminal
Measuring Instrument	Vectorscope
Specified Value	Fig. 5-1-11. A to C

Checking method:

- 1) Check that the lens is not covered with either filter.
- 2) Set data: 0F to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 3) Check that the center of the white luminance point is within the circle shown in Fig. 5-1-11.A.
- 4) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 5) Set data: 23 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 6) Place the C14 filter on the lens.
- 7) Check that the center of the white luminance point settles in the circle shown in Fig. 5-1-11. B.
- 8) Remove the C14 filter, and place the ND filter 1.3 (1.0 + 0.3) on the lens.
- 9) Check that the white luminance point stopped moving, and then remove the ND filter 1.3.
- 10) Check that the center of the white luminance point settles in the circle shown in Fig. 5-1-11. C.

Processing after Completing Adjustments

- 1) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.

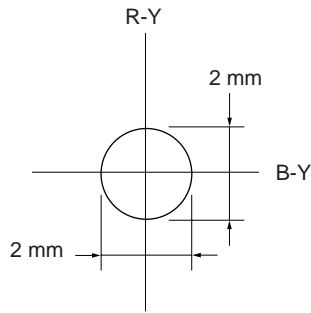


Fig. 5-1-11. A

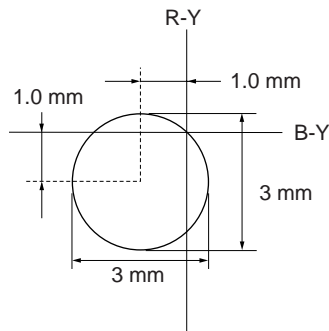


Fig. 5-1-11. B

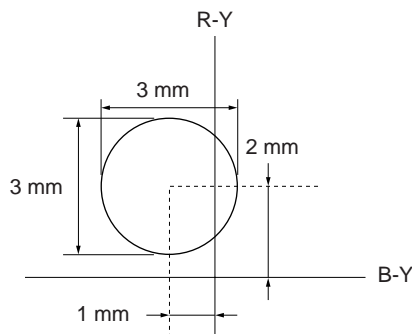


Fig. 5-1-11. C

16. Velocity Sensor Sensitivity Adjustment

- This adjustment is performed only when replacing the velocity sensor.

Although this adjustment need not be performed when the circuit is damaged, etc., check the operations.

- Note down the sensitivity displayed on the velocity sensor of the repair parts. At this time, note down also to which board it was attached to.

Be sure to check because if attached incorrectly, the screen will vibrate up and down or left and right during hand-shake correction operations.

Precautions on Parts Replacement

There are two types of repair parts.

For SE500: 1-801-731-31

For SE501: 1-810-725-71

If replace with other parts, the screen will vibrate up and down or left and right during hand-shake correction operations. After replacing, re-adjust according to the adjusting method after replacement.

Precautions on Velocity Sensor

The sensor incorporates a precision oscillator. Handle it with care as if it is dropped, the the balance of the oscillator will be disrupted and operations will not be performed properly.

Adjusting page	F
Adjusting address	41, 42

Note: The sensor sensitivity of SE500 and SE501 of the CD-168 board is written only on the repair parts.

Adjusting method:

- Set data: 01 to page: 6, address: 00.
- Read the sensor sensitivity written on SE500 of the CD-168 board, and take this as S_{500} .
- Read the sensor sensitivity written on SE501 of the CD-168 board, and take this as S_{501} .
- Calculate D_{41}' and D_{42}' using the following equation (decimal calculation).

NTSC model

$$D_{41}' = \frac{88}{S_{501}}$$

$$D_{42}' = \frac{101}{S_{500}}$$

PAL model

$$D_{41}' = \frac{119}{S_{501}}$$

$$D_{42}' = \frac{115}{S_{500}}$$

- Convert D_{41}' and D_{42}' into hexadecimal digits, to obtain D_{41} and D_{42} . (Round off decimal points)
- Set data: D_{41} to page: F, address: 41, and press the PAUSE button of the adjusting remote commander.
- Set data: D_{42} to page: F, address: 42, and press the PAUSE button of the adjusting remote commander.

Processing after Completing Adjustments

- Set data: 00 to page: 6, address: 00.
- Check that the hand-shake correction operations have been performed normally.

1-3. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENTS

Note 1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

Note 2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note 3: Set the VF PW-SAVE (Menu display) to “OFF” position, unless specified otherwise.

Note 4: Set the VF BRIGHT (Menu display) to the center.

[Adjusting connector]

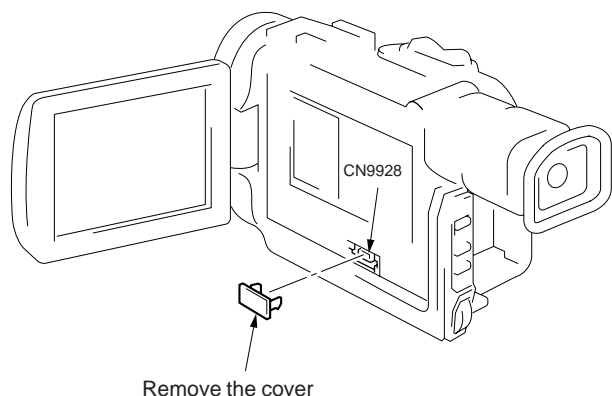
Most of the measuring points for adjusting the view-finder are concentrated in CN9928 of the CB-58 board.

Connect the measuring instruments via the CPC-8 jig (J-6082-388-A).

The following table shows the Pin No. and signal name of CN9928.

Pin No.	Signal Name	Pin No.	Signal Name
1	VG	2	DEC FSC
3	GND	4	GND
5	HST	6	DEC R-Y
7	GND	8	DEC B-Y
9	XHCG	10	AFC ERR
11	VCO	12	I1 Y AD
13	UNREG —	14	I1 CR AD
15	UNREG +	16	I1 CB AD
17	GND	18	I1 CR/CB AD
19	EVF VG	20	N. C.

Table 5-1-2.



[Power Supply Voltage]

Adjust the power supply voltage so that the voltage of Pin ⑮ of CN9928 on CB-58 board becomes 8.4 ± 0.1 Vdc .

1. EVF Initial Data Input

Mode	Camera
Subject	Arbitrary
Adjustment Page	D
Adjustment Address	70 to 7A, 87 to 8F, 99

Adjusting method:

1) Set data: 01 to page: 0, address: 01.

2) Select page: D, and input the data in the following table.

Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

3) Set data: 00 to page: 0, address: 01.

Address	Data		Remark
	NTSC	PAL	
70	70	70	
71	60	60	
72	A1	A1	
73	80	80	Fixed value
74	80	80	Fixed value
75	70	70	Fixed value
76	90	90	
77	5A	5A	
78	70	70	
79	79	74	Fixed value
7A	B0	B0	
87	85	E3	Fixed value
88	38	38	Fixed value
89	00	00	Fixed value
8A	20	20	Fixed value
8B	20	20	Fixed value
8C	02	02	Fixed value
8D	00	00	Fixed value
8E	12	12	Fixed value
8F	40	40	Fixed value
99	31	31	Fixed value

Table 5-1-3.

2. VCO Adjustment (VF-115 Board)

Set the VCO freerun frequency. If deviated, the EVF screen will be blurred.

Mode	Camera
Subject	Arbitrary
Measurement point	Pin ①⑨ of CN9928 (VCO) on CB-58 board
Measuring instrument	Oscilloscope (DC range)
Adjustment page	D
Adjustment address	76
Specified value	$A = 1.8 \pm 0.05\text{Vdc}$

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Check the GND level of the oscilloscope.
- 3) Change the data of page: D, address: 4F, and set the PCO output voltage (A) to the specified value.
- 4) Press the PAUSE button of the adjusting remote commander.
- 5) Set data: 00 to page: 0, address: 01.

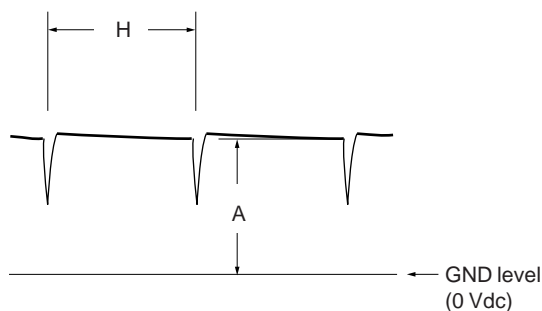


Fig. 5-1-12.

3. Bright Adjustment (VF-115 Board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement point	Pin ①⑨ of CN9928 (EVF VG) on CB-58 board
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	7A
Specified value	$A = 7.0 \pm 0.1\text{ V}$

Connection:

- 1) Connect Pin ①⑨ and Pin ①⑦ (GND) of CN9928 with a 3.3 k Ω resistor.
3.3 k Ω resistor: 1-249-423-11

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Input the following data to page: D, address: 88 to 8D.
Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.
- 3) Change the data of page: D, address: 7A, and set the voltage (A)

Address	88	89	8A	8B	8C	8D
Data	00	00	00	00	00	00

between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.

- 4) Press the PAUSE button of the adjusting remote commander.
- 5) Input the following data to page: D, address: 88 to 8D.
Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.
- 6) Set data: 00 to page: 0, address: 01.

Address	88	89	8A	8B	8C	8D
Data	38	00	20	20	02	00

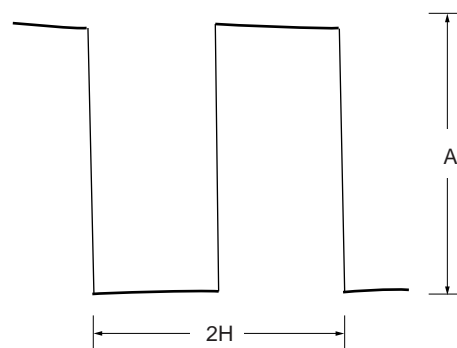


Fig. 5-1-13.

4. Contrast Adjustment (VF-115 Board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement point	Pin ⑩ of CN9928 (EVF VG) on CB-58 board
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	72
Specified value	A = 1.35 ± 0.1V (NTSC) A = 1.25 ± 0.1V (PAL)

Connection:

- 1) Connect Pin ⑩ and Pin ⑦ (GND) of CN9928 with a 3.3 kΩ resistor.
3.3 kΩ resistor: 1-249-423-11

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
2) Input the following data to page: D, address: 88 to 8D.
Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

Address	88	89	8A	8B	8C	8D
Data	00	27	00	00	00	00

- 3) Change the data of page: D, address: 72, and set the voltage (A) between white 50% and the pedestal to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Input the following data to page: D, address: 88 to 8D.

Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

Address	88	89	8A	8B	8C	8D
Data	38	00	20	20	02	00

- 6) Set data: 00 to page: 0, address: 01.

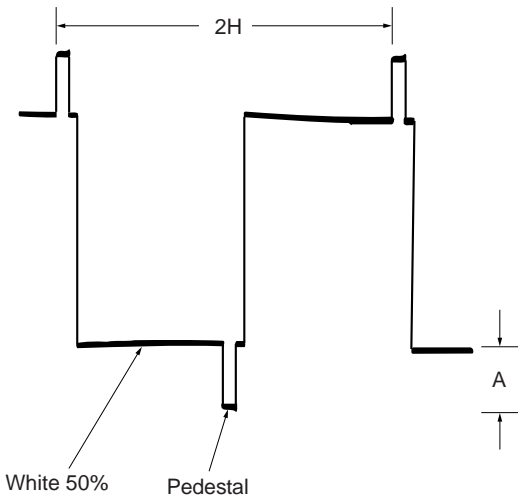


Fig. 5-1-14.

5. Backlight Consumption Current Adjustment (VF-115 Board)

Set the backlight luminance and color temperature. If deviated, the image may become dark or bright.

Mode	Camera
Subject	Arbitrary
Measurement point	+ Probe: Pin ⑮ of CN9928 (EVF UNREG +) on CB-58 board – Probe: Pin ⑬ of CN9928 (EVF UNREG –) on CB-58 board
Measuring instrument	Digital voltmeter
Adjustment page	D
Adjustment address	77
Specified value	A = 21.5 ± 1.0 mVdc

Note: Adjust 30 seconds after running on the power supply.

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
2) Adjust the power supply voltage so that the voltage of Pin ⑮ of CN9928 (EVF UNREG +) on CB-58 board is 6.00 ± 0.05 Vdc.
3) Change the data of page: D, address: 77, and set the voltage difference (A) between Pin ⑮ of CN9928 (EVF UNREG +) and Pin ⑬ of CN9928 (EVF UNREG –) to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 0, address: 01.

6. White Balance Adjustment (VF-115 Board)

Correct the white balance.

If deviated, the reproduction of the EVF screen may degenerate.

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.

Mode	Camera
Subject	Arbitrary
Measurement point	Check on EVF screen
Measuring instrument	
Adjustment page	D
Adjustment address	70, 71
Specified value	The EVF screen should not be colored.

- 2) Input the following data to page: D, address: 88 to 8D.

Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

- 3) Set the data of page: D, address: 70 and 71 to the initial value.

Note: To write in the non-volatile memory (EEPROM), press

Address	88	89	8A	8B	8C	8D
Data	00	27	00	00	00	00

the PAUSE button of the adjusting remote commander each time to set the data.

- 4) Check that the EVF screen is not colored. If colored, change the data of page: D, address: 70 and 71 so that the EVF screen is not colored.

Note: To write in the non-volatile memory (EEPROM), press

Address	70	71
Data	70	60

the PAUSE button of the adjusting remote commander each time to set the data.

- 5) Input the following data to page: D, address: 88 to 8D.

Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

- 6) Set data: 00 to page: 0, address: 01.

7. AUTO ON Level Adjustment (VF-115 Board)

Adjust the power save sensor, and maintain at the level at which the backlight is AUTO ON.

Note 1: Backlight is lit: Approx. +1.8 Vdc

Address	88	89	8A	8B	8C	8D
Data	38	00	20	20	02	00

Backlight is not lit: Approx. -0.5 Vdc

Note 2: Do not perform this adjustment in strong light or under lights.

Note 3: The specified value is the adjustment value during adjustment. The specified value during operation check is as follows.

Mode	Camera
Subject	Arbitrary
Measurement point	Pin ⑪ of CN9928 (VCO) on CB-58 board (Note 1)
Measuring instrument	Oscilloscope (DC range)
Adjustment page	D
Adjustment address	78
Specified value	AUTO ON distance: Above 9 cm, less than 11 cm (Note2)

AUTO OFF distance: Above 9 cm, less than 15 cm

AUTO ON distance: Above 7 cm, less than 13 cm

Switch setting:

- 1) Set the “VF PW-SAVE” on the menu display to “ON”.

Adjustment preparation:

- 1) Prepare a 30 cm X 30 cm white paper, and place it 10 cm away from the EVF lens.

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Input the following data to page: D, address: 88 to 8D.
Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.
- 3) Increase the data of page: D, address: 78, and turn on the backlight.
- 4) Decrease the data of page: D, address: 78 slowly, and turn off the backlight.
- 5) Press the PAUSE button of the adjusting remote commander.
- 6) Move the white paper away from the EVF lens and turn off the backlight. Then move it to the lens slowly, and check that the backlight lights up when the distance (AUTO ON distance) is the specified value.

Address	88	89	8A	8B	8C	8D
Data	00	00	00	00	00	00

- 7) Move the white paper near the EVF lens so that the backlight lights up. and then move it away, and check that the backlight goes off when the distance (AUTO OFF distance) is the specified value of Note 3.
- 8) Input the following data to page: D, address: 88 to 8D.
Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.
- 9) Set data: 00 to page: 0, address: 01.

Address	88	89	8A	8B	8C	8D
Data	38	00	20	20	02	00

1-4. LCD SYSTEM ADJUSTMENTS

Note 1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

Note 2: When replacing the LCD unit, be very careful to prevent damages caused by static electricity.

Note 3: Set the brightness to the center using the LCD BRIGHT button (PD-85 board S5950, 5951).

Note 4: Set the LCD COLOR (Menu display) to the center.

[Adjusting Connector]

Most of the measuring points for adjusting the LCD system are concentrated in CN9928 on the CB-58 board.

Connect the measuring instruments via CPC-8 jig (J-6082-388-A). Refer to “Adjusting connector” of “1-3”. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENTS” for further details.

[Power Supply Voltage]

Adjust the power supply voltage so that the voltage of the battery terminal becomes 8.4 ± 0.1 Vdc.

[Alignment Tape]

Use the audio check tape for the LCD system adjustment.

NTSC model

XH5-3 (Parts code : 8-967-997-51)

PAL model

XH5-3P (Parts code : 8-967-997-55)

1. LCD Initial Data Input

Mode	VTR stop
Signal	No signal
Adjustment Page	D
Adjustment Address	60 to 6F, 80 to 8F, 99

Adjusting method:

1) Set data: 01 to page: 0, address: 01.

2) Select page: D, and input the data in the following table.

Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

3) Set data: 00 to page: 0, address: 01.

Address	Data		Remark
	NTSC	PAL	
60	00	00	Fixed value
61	72	72	
62	70	70	
63	9D	9D	
64	CB	B5	
65	97	97	
66	82	82	Fixed value
67	80	80	Fixed value
68	A3	8D	
69	00	00	Fixed value
6A	78	78	Fixed value
6B	BF	BF	Fixed value
6C	7C	7C	
6D	61	61	
6E	33	33	Fixed value
6F	65	65	Fixed value
80	38	38	Fixed value
81	00	00	Fixed value
82	20	20	Fixed value
83	20	20	Fixed value
84	02	02	Fixed value
85	04	04	Fixed value
86	85	E3	Fixed value
8E	12	12	Fixed value
8F	40	40	Fixed value
99	31	31	Fixed value

2. VCO Adjustment (PD-85 Board)

Set the VCO freerun frequency.

If deviated, the LCD screen will be blur.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ⑤ of CN9928 (HST) on CB-58 board
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	64
Specified Value	$f = 15734 \pm 30 \text{ Hz (NTSC)}$ $f = 15625 \pm 30 \text{ Hz (PAL)}$

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: 02 to page: 2, address: 11.
- 3) Set data: 80 to page: D, address: 60, and press the PAUSE button of the adjusting remote commander.
- 4) Change the data of page: D, address 64, and set the HST signal frequency (f) to the specified value.
- 5) Press the PAUSE button of the adjusting remote commander.
- 6) Set data: 00 to page: D, address: 60, and press the PAUSE button of the adjusting remote commander.
- 7) Set data: 00 to page: 2, address: 11.
- 8) Set data: 00 to page: 0, address: 01.

3. Horizontal Display Position Adjustment (PD-85 Board)

Adjust the LCD horizontal position.

If deviated, the screen will deviate to the left or right.

Mode	VTR playback
Signal	Optional recorded tape
Measurement Point	CH1: Pin ⑨ of CN9928 (XHCG) on CB-58 board CH2: Pin ⑤ of CN9928 (HST) on CB-58 board
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	68
Specified Value	$T = 9.2 \pm 0.1 \text{ } \mu\text{sec. (NTSC)}$ $T = 11.1 \pm 0.1 \text{ } \mu\text{sec. (PAL)}$

Note: Don't set the LCD panel to the reverse mode (when VTR mode), or the mirror mode (when CAMERA mode).

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Change the data of page: D, address: 68, and set the time difference (T) between the XHCG waveform and HST waveform to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Set data: 00 to page: 0, address: 01.

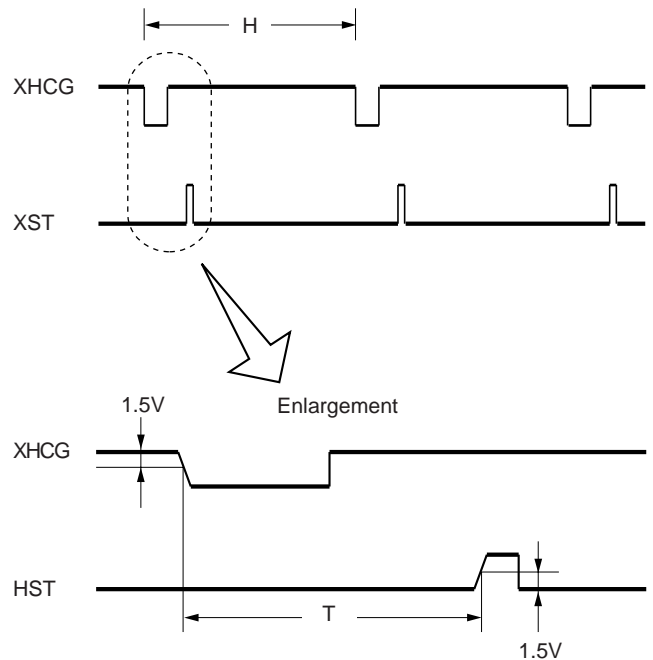


Fig. 5-1-15.

4. Bright Adjustment (PD-85 Board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will not be consistent or will be blackish or saturated (whitish).

Mode	VTR playback
Signal	Audio operation check tape, color bar portion
Measurement Point	Pin ① of CN9928 (VG) on CB-58 board
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	6C
Specified Value	$A = 3.25 \pm 0.05V$

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Input the following data to page: D, addresses: 82 and 83.

Address	82	83
Data	00	C0

Note: Press the PAUSE button of the adjusting remote commander each time to set the data.

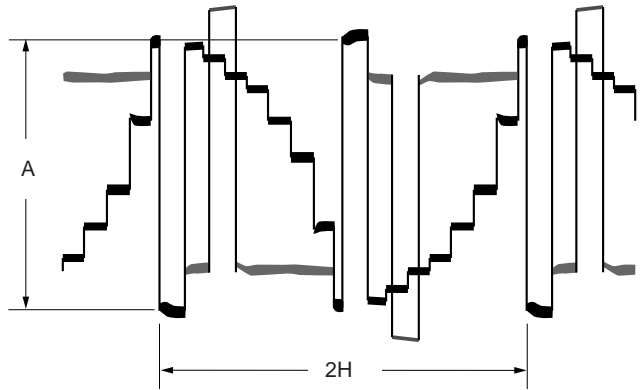
- 3) Change the data of page: D, address: 6C, and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
- 4) Press the PAUSE button of the adjusting remote commander.
- 5) Input the following data to page: D, addresses: 82 and 83.

Address	82	83
Data	20	20

Note: Press the PAUSE button of the adjusting remote commander each time to set the data.

- 6) Set data: 00 to page: 0, address: 01.
- 7) Perform “Contrast Adjustment”.

For NTSC model



For PAL model

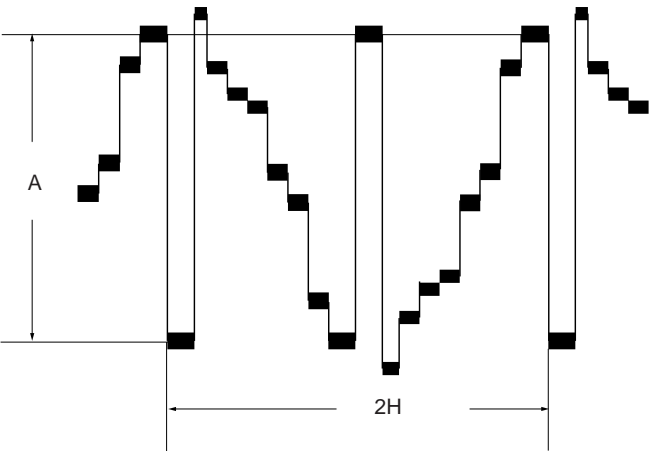


Fig. 5-1-16.

5. Contrast Adjustment (PD-85 Board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will not be consistent or will be blackish or saturated (whitish).

Mode	VTR playback
Signal	Audio operation check tape, color bar portion
Measurement Point	Pin ① of CN9928 (VG) on CB-58 board
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	63
Specified Value	$A = 3.45 \pm 0.05V$

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Input the following data to page: D, addresses: 82 and 83.

Address	82	83
Data	00	00

Note: Press the PAUSE button of the adjusting remote commander each time to set the data.

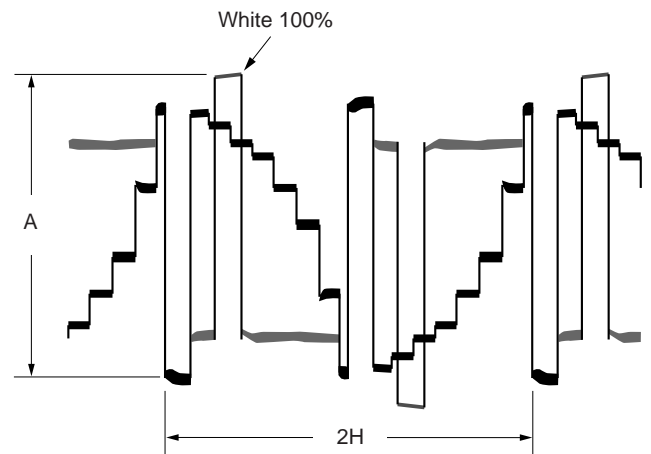
- 3) Change the data of page: D, address: 63, and set the voltage (A) between the pedestal and white 100% to the specified value.
- 4) Press the PAUSE button of the adjusting remote commander.
- 5) Input the following data to page: D, addresses: 82 and 83.

Address	82	83
Data	20	20

Note: Press the PAUSE button of the adjusting remote commander each time to set the data.

- 6) Set data: 00 to page: 0, address: 01.
- 7) Check that the specified value of "Bright Adjustment" is satisfied, if not, perform "Bright Adjustment".

For NTSC model



For PAL model

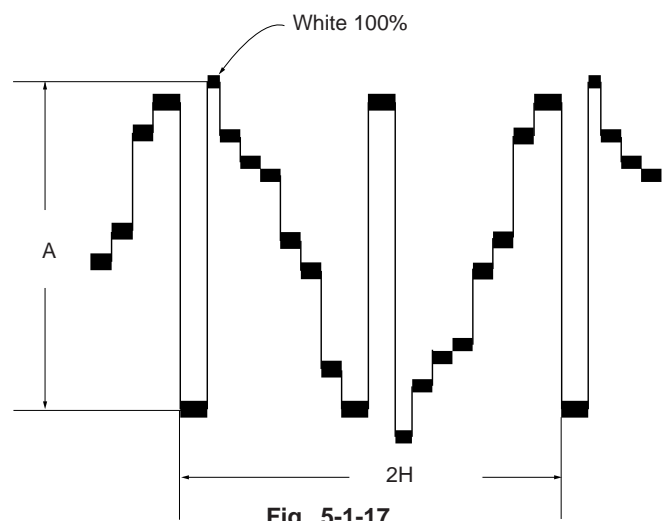


Fig. 5-1-17.

6. Color Adjustment for NTSC model (PD-85 Board)

Set the color saturation to the standard value. If deviated, the color will be to dark or light.

Mode	VTR stop
Signal	Color bar
Measurement point	Pin ① of CN9928 (VG) on CB-58 board
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	6D
Specified value	$A = +0.10 \pm 0.05V$

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Add 10(Hexadecimal number) to the data of page: D, address: 63, and press the PAUSE button of the adjusting remote commander.
- 3) Change the data of page: D, address: 6D, and set the green level (A) to white(75%) to the specified value.
- 4) Press the PAUSE button of the adjusting remote commander.
- 5) Subtract 10(Hexadecimal number) from the data of page: D, address: 63, and press the PAUSE button of the adjusting remote commander.
- 6) Set data: 00 to page: 0, address: 01.

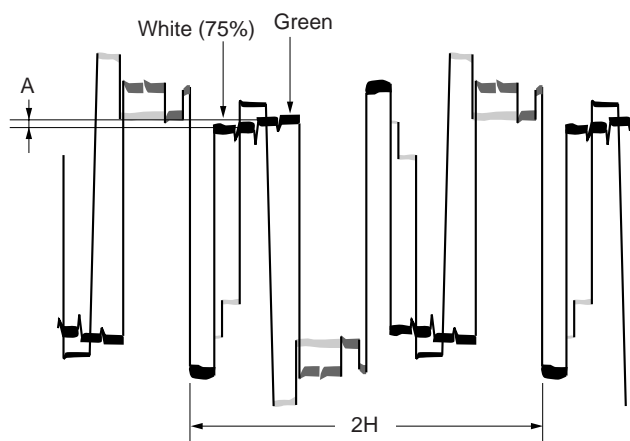


Fig. 5-1-18.

7. Color Adjustment for PAL model (PD-85 Board)

Set the color saturation to the standard value. If deviated, the color will be to dark or light.

Mode	VTR stop
Signal	Color bar
Measurement point	Pin ① of CN9928 (VG) on CB-58 board
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	6D
Specified value	$A = +0.10 \pm 0.05V$

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Add 10(Hexadecimal number) to the data of page: D, address: 63, and press the PAUSE button of the adjusting remote commander.
- 3) Change the data of page: D, address: 6D, and set the green level (A) to yellow to the specified value.
- 4) Press the PAUSE button of the adjusting remote commander.
- 5) Subtract 10(Hexadecimal number) from the data of page: D, address: 63, and press the PAUSE button of the adjusting remote commander.
- 6) Set data: 00 to page: 0, address: 01.

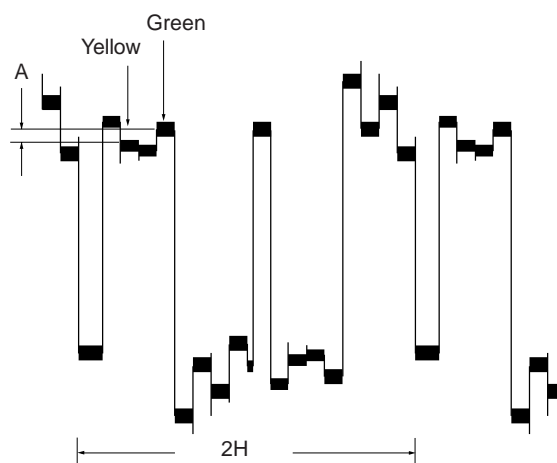


Fig. 5-1-19.

8. V COM Adjustment (PD-85 Board)

Set the DC bias of the common electrode drive signal of the LCD panel to the specified value.

If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	VTR playback
Signal	Audio operation check, Color bar portion
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	65

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set the data of page: D, address: 65 to the initial value (97).
- 3) Change the data of page: D, address: 65 and observe the LCD display. When the data is increased from the initial value, vertical lines with intervals of 3 dots between them will be seen. Take the data at this time as DA. When decreased from the initial value, the same vertical lines will be seen and this data named DB.
- 4) Convert DA and DB to decimal numbers to obtain DA' and DB'. (Refer to Table 5-4-2. "Hexadecimal-Decimal Conversion table" of "Service mode".)
- 5) Calculate DC' using the following equation (decimal calculation)

$$DC' = (DA' + DB') \div 2$$
- 6) Convert DC' to a hexadecimal number to obtain DC.
- 7) Set data: DC to page: D, address: 65 and press the PAUSE button of the adjusting remote commander.
- 8) Set data: 00 to page: 0, address: 01.

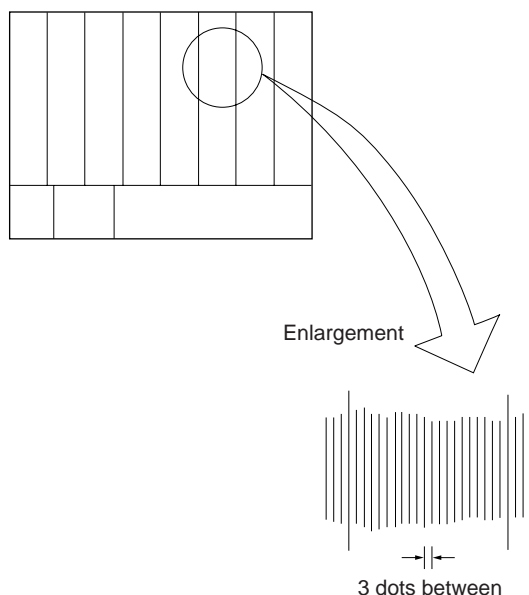


Fig. 5-1-20.

9. White Balance Adjustment (PD-85 Board)

Adjust to the proper white balance.

If it is not correct, the color reproducibility of the LCD panel will be poor.

Mode	CAMERA
Signal	Optional recorded tape
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	61, 62
Specified Value	The display should not be colored

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Input the following data to page: D, address: 80 to 83.

Address	80	81	82	83
Data	00	27	00	00

Note: Press the PAUSE button of the adjusting remote commander each time to set the data.

- 3) Set the data of page: D, address: 61 and 62 to the initial value.

Address	61	62
Data	72	70

Note: Press the PAUSE button of the adjusting remote commander each time to set the data.

- 4) Check that the LCD display is not colored. If it is, change the data of address: 61 and address: 62, and adjust so that the display is not colored.

Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

- 5) Input the following data to page: D, address: 80 to 83.

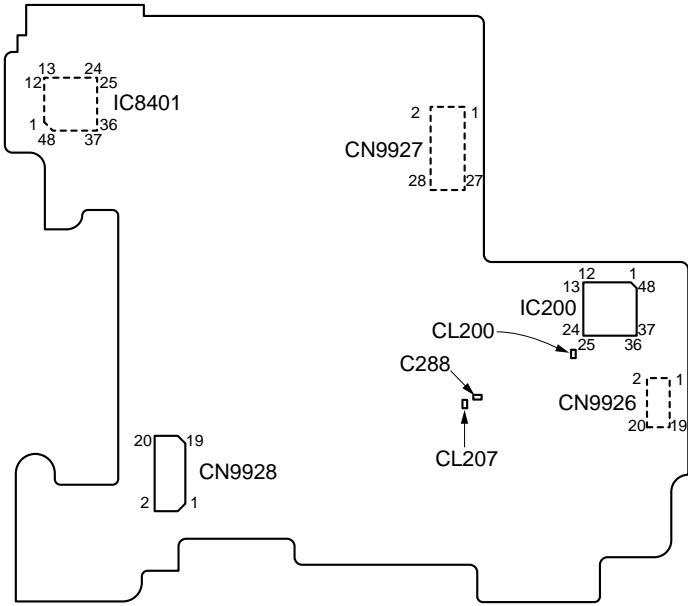
Address	80	81	82	83
Data	38	00	20	20

Note: Press the PAUSE button of the adjusting remote commander each time to set the data.

- 6) Set data: 00 to page: 0, address: 01.

1-5. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

CB-58 BOARD (SIDE B)



NOTE: IC8401 is mounted to the SIDE A.

5-2. MECHANISM SECTION ADJUSTMENTS

Mechanism Section Adjustments

For details of mechanism section adjustments, checks, and replacement of mechanism parts, refer to the separate volume “DV MECHANICAL ADJUSTMENT MANUAL I D Mechanism”.

2-1. OPERATING WITHOUT CASSETTE

- 1) Refer to “2. Removal” and supply the power with the cabinet (L) assembly removed.
(However, the cabinet (L) assembly incorporates the CC DOWN switch and LANC terminal, so connect the cabinet (L) assembly to CB-58 board electrically.)
- 2) Connect the adjusting remote commander to the LANC terminal.
- 3) Turn on the HOLD switch of the adjusting remote commander.
- 4) Close the cassette compartment without the cassette to set the loading completed state.
- 5) Set data: 01 to page: 0, address: 01.
- 6) Set data: FD to page: C, address: 52, and press the PAUSE button of the adjusting remote commander.
- 7) Set data: 10 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
- 8) Turn off the HOLD switch of the adjusting remote commander.
- 9) While pressing the CC DOWN switch, turn the power off and then on.

The above procedure enables the mechanism to operate without the cassette. After checking operations, be sure to perform “Procedure After Checking Operations”.

To use the “No-Cassette Operations Mode” and “Forced Power ON Mode” together, set the following data to page: D, address: 10.

Forced VTR power ON mode 12

[Procedure after checking operations]

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: FF to page: C, address: 52, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 00 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
- 4) Set data: 00 to page: 0, address: 01.
- 5) Disconnect the power supply of the unit.

2-2. TAPE PATH ADJUSTMENT

1. Preparations for Adjustment

- 1) Clean the tape running side (tape guide, capstan shaft, pinch roller).
- 2) Connect the adjusting remote commander to the LANC terminal.
- 3) Turn on the HOLD switch of the adjusting remote commander.
- 4) Select page: 3, address: 3C, and set data: 07.
- 5) Connect the oscilloscope.
Channel 1: RJ-74 board, CN9902 Pin ⑧ (Note 1)
External trigger: RJ-74 board, CN9902 Pin ⑥
(Connect the oscilloscope via CPC-8 jig (J-6082-388-A).)
- 6) Playback an alignment tape (XH2-1) for tracking.
- 7) Check that the oscilloscope RF waveform is flat at the entrance and exit.
If not flat, adjust according to the separate volume “DV MECHANICAL ADJUSTMENT MANUAL I D Mechanism”.
- 8) After completing the adjustment, perform “2. Procedure after checking operations”.

Note 1: Connect Pins ⑧ and ⑦ (GND) of CN9902 with a 75 Ω resistor.

Pin No.	Signal Name	Pin No.	Signal Name
1	TCK	2	TMS
3	TDI	4	GND
5	TRACK ID	6	JSWP
7	GND	8	RF MONITOR
9	VCC2	10	AGC IN
11	VCC1	12	EQ IN
13	LOCK	14	REF OUT
15	ENV OUT	16	GND
17	TDO8	18	C1ERP
19	FLTD	20	GND

Table 5-2-1.

2. Procedure after operation

- 1) Connect the adjusting remote commander, and turn on the HOLD switch.
- 2) Select page: 3, address: 3C, and set data: 00.
- 3) Disconnect the power of the unit.

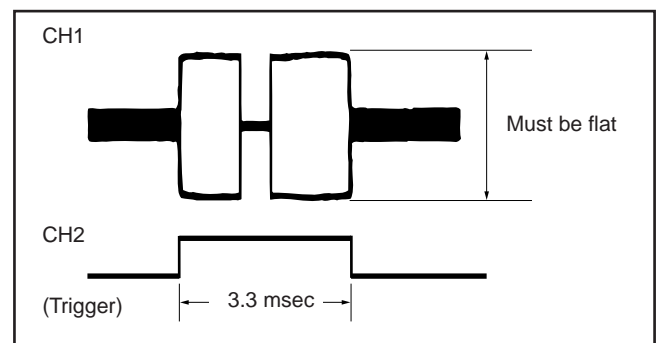


Fig. 5-2-1.

5-3. VIDEO SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts on page 5-58.

Note: NTSC model : DCR-TRV7
PAL model : DCR-TRV7E

3-1. PREPARATIONS BEFORE ADJUSTMENTS

Use the following measuring instruments for video section adjustments.

3-1-1. Equipment Required

- 1) TV monitor
- 2) Oscilloscope (dual-phenomenon, band above 30 MHz with delay mode) (Unless specified otherwise, use a 10 : 1 probe.)
- 3) Frequency counter
- 4) Digital voltmeter
- 5) Audio generator
- 6) Audio level meter
- 7) Audio distortion meter
- 8) Audio attenuator
- 9) Regulated power supply
- 10) Alignment tapes
 - Tracking standard (XH2-1)
Parts code: 8-967-997-01
 - SW/OL standard (XH2-3)
Parts code: 8-967-997-11
 - Audio operation check for NTSC (XH5-3)
Parts code: 8-967-997-51
 - System operation check for NTSC (XH5-5)
Parts code: 8-967-997-61
 - BIST check for NTSC (XH5-6)
Parts code: 8-967-997-71
 - Audio operation check for PAL (XH5-3P)
Parts code: 8-967-997-55
 - System operation check for PAL (XH5-5P)
Parts code: 8-967-997-66
 - BIST check for PAL (XH5-6P)
Parts code: 8-967-997-76
- 11) Remote commander for adjustment (J-6082-053-B)
- 12) CPC-8 jig (J-6082-388-A)
- 13) IR receiver jig (J-6082-383-A)
- 14) Extension cable (40P, 0.5 mm—39P, 0.3 mm)
For extension between the DD-96 board (CN3901) and the CB-58 board (CN9925) (J-6082-387-A)
- 15) Extension cable (28P, 0.8 mm)
For extension between the DD-96 board (CN3902) and the RJ-74 board (CN9903) (J-6082-385-A)
- 16) Extension cable (80P, 0.5 mm)
For extension between the RJ-74 board (CN9901) and the CB-58 board (CN9921) (J-6082-386-A)

3-1-2. Precautions on Adjusting

- 1) The adjustments of this unit are performed in the VTR mode or camera mode.
To set to the VTR mode, set the power switch to "VTR" (or PLAYER) or set the "Forced VTR Power ON Mode" using the adjusting remote commander (Note 1).
To set to the camera mode, set the power switch to "CAMERA" or set the "Forced Camera Power ON Mode" using the adjusting remote commander (Note 2).
After completing the adjustments, be sure to exit the "Forced VTR Power ON Mode" or "Forced Camera Power ON Mode". (Note 3)
- 2) The front panel block (MA-301 board) need not be connected except in "IR Transmitter Adjustments" and "Battery End Adjustments". To remove, disconnect the following connector.
 1. CN7001 of MA-301 board (18P, 0.5 mm)
- 3) The viewfinder need not be connected (except during battery end adjustment). Disconnect the following connector when adjusting.
 1. CN9924 of CB-58 board (20P, 0.5mm, B-B)
- 4) The lens block need not be connected in adjustments other than the camera system adjustments (except during battery end adjustment). Disconnect the following connector when adjusting.
 1. CN200 of CB-58 board (50P, 0.5mm, B-B)
- 5) The cabinet (R) need not be connected in adjustments (except during battery and adjustment and IR transmitter adjustment). When removing the cabinet (R), disconnect the following connector.
 1. CN9927 of CB-58 board (27P, 0.3mm)
- 6) Because the cabinet (L) (POWER switch, CC DOWN switch, VK-42 board, HL-8 board, HL-1 board) is attached with CC DOWN switch and LANC terminal, be sure to connect the cabinet (L) when perform the adjustments. Set the CC DOWN switch to ON normally (pressed state), and turn it OFF only when ejecting. As removing the cabinet (L) means removing the lithium 3V power supply, data such as date, time, user-set menus will be lost. After adjustments, reset these data. If cabinet (L) has been removed, the self-diagnosis data, data on history of use (total drum rotation time) will be lost. Before removing, note down the self-diagnosis data and data of page: 2, address: 35 to 37. (Refer to the "Service Mode" for the data on the history of use.)

Note 1: Setting the "Forced VTR Power ON" Mode (VTR Mode)

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: 02 to page: D, address: 10, and press the PAUSE button of the remote commander.

The above procedure will enable the VTR power to be turned on with the cabinet (L) block removed.

After completing operations, be sure to exit the "Forced VTR Power ON" mode.

Note 2: Setting the "Forced Camera Power ON" Mode (Camera Mode)

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: 01 to page: D, address: 10, and press the PAUSE button of the remote commander.

The above procedure will enable the camera power to be turned on with the cabinet (L) block removed.

After completing operations, be sure to exit the "Forced Camera Power ON" mode.

Note 3: Exiting the "Forced Power ON" Mode

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: 00 to page: D, address: 10, and press the PAUSE button of the remote commander.
- 3) Set data: 00 to page: 0, address: 01.

3-1-3. Adjusting Connectors

Some of the adjusting pints of the video section are concentrated at CN9902 of the RJ-74 board. Remove the cover at the battery terminal and connect the measuring instruments via the CPC-8 jig (J-6082-388-A). The following table lists the pin numbers and signal names of CN9902.

Pin No.	Signal Name	Pin No.	Signal Name
1	TCK	2	TMS
3	TDI	4	GND
5	TRACK ID	6	JSWP
7	GND	8	RF MONITOR
9	VCC2	10	AGC IN
11	VCC1	12	EQ IN
13	LOCK	14	REF OUT
15	ENV OUT	16	GND
17	TDO8	18	C1ERP
19	FLTD	20	GND

Table 5-3-1.

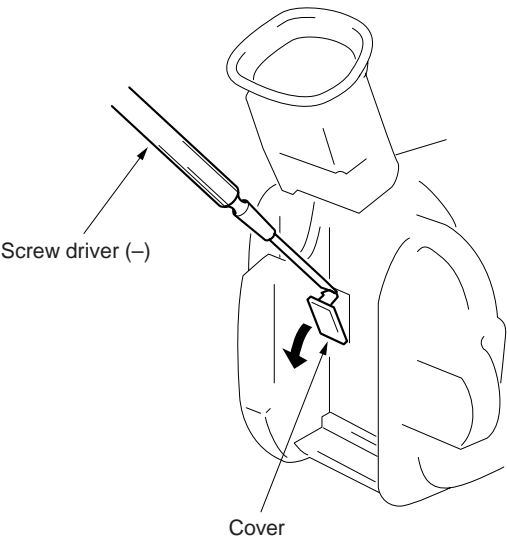


Fig. 5-3-1.

3-1-4. Connection of Equipment

Connect the measuring instruments as shown in Fig. 5-3-2.

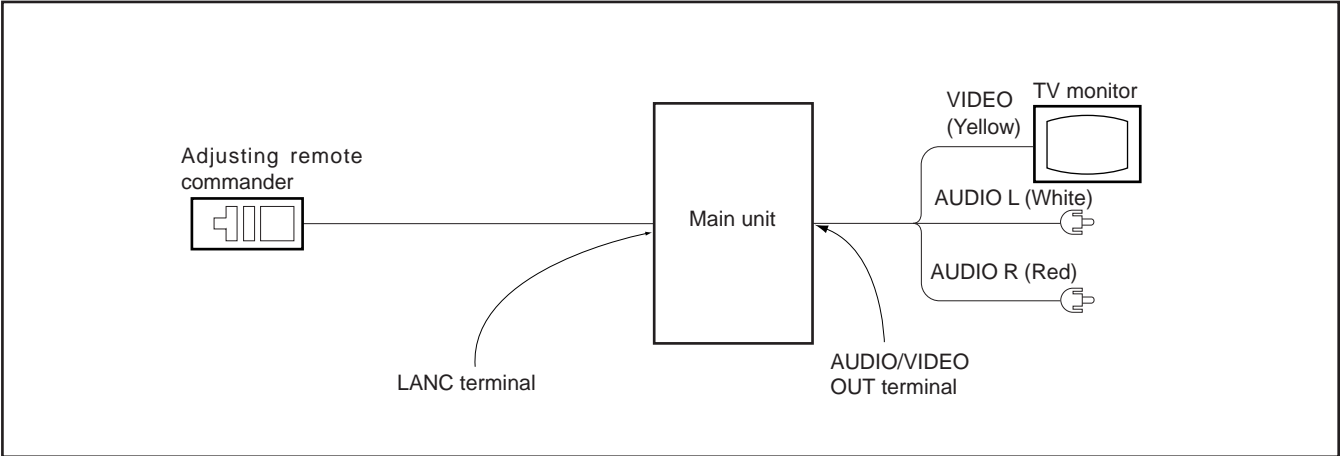


Fig. 5-3-2.

3-1-5. Alignment Tapes

Use the alignment tapes shown in the following table.

Use tapes specified in the signal column of each adjustment.

Name	Use
Tracking standard (XH2-1)	Tape path adjustment
SW/OL standard (XH2-3)	Switching position adjustment
Audio operation check (XH5-3 (NTSC), XH5-3P (PAL))	Audio system adjustment
System operation check (XH5-5 (NTSC), XH5-5P (PAL))	Operation check
BIST check (XH5-6 (NTSC), XH5-6P (PAL))	BIST check

Table 5-3-2.

Fig. 5-3-3. shows the 75% color bar signals recorded on the alignment tape for Audio Operation Check.

Note: Measure with video terminal (Terminated at 75 Ω)

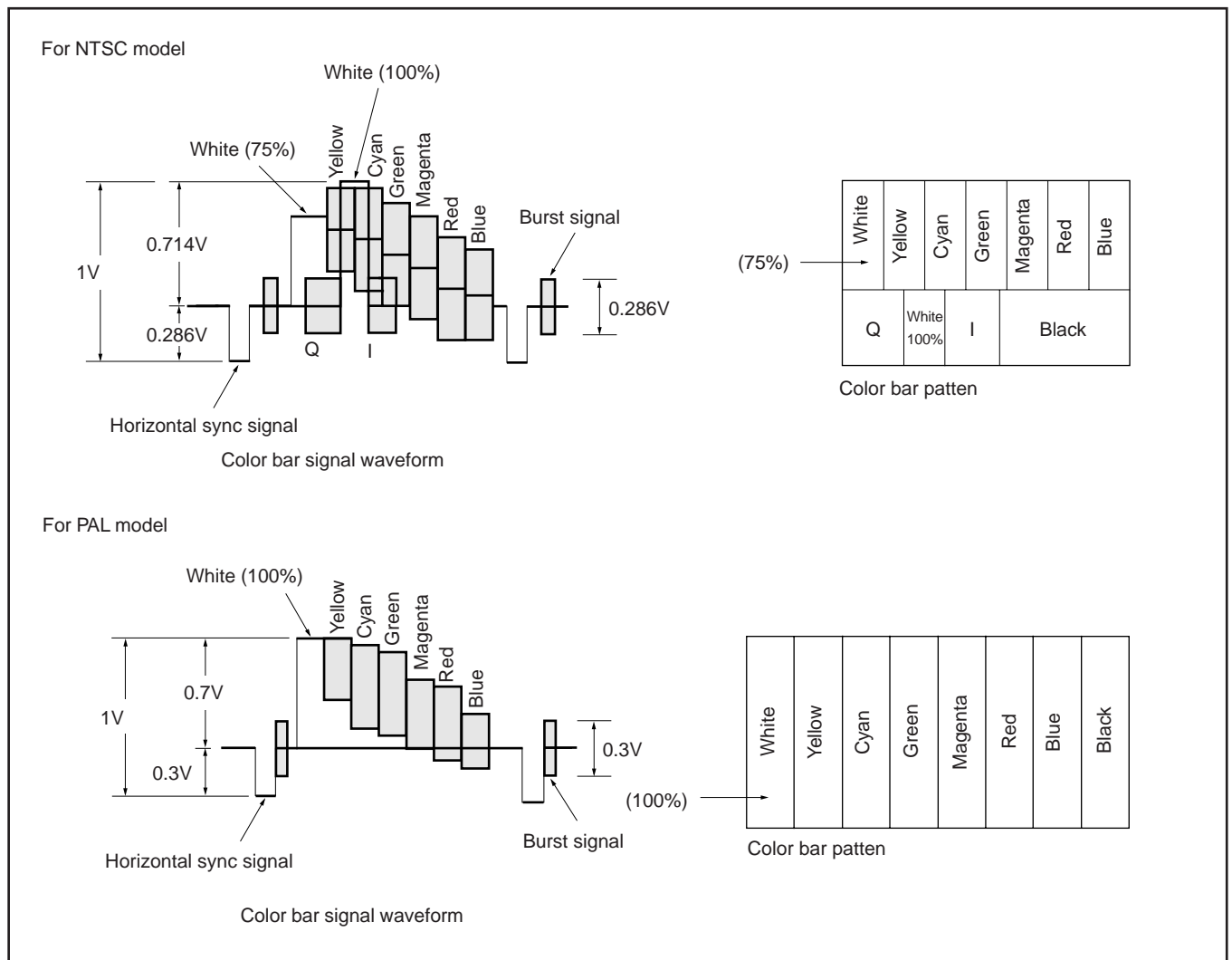


Fig. 5-3-3. Color Bar Signal of Alignment Tapes

3-1-6. Output Level and Impedance

Video output

Special stereo mini jack

Output signal: 1 Vp-p, 75 Ω unbalanced, sync negative

S video output

4-pin mini DIN

Luminance signal: 1 Vp-p, 75 Ω unbalanced, sync negative

Chrominance signal: 0.286 Vp-p, 75 Ω unbalanced (NTSC)
: 0.300 Vp-p, 75 Ω unbalanced (PAL)

Audio output

Special stereo mini jack

Output level: 327 mV (at load impedance 47 k Ω)

Output impedance: Below 2.2 k Ω

3-1-7. Page D Address

Note 1: The ← mark shown in the adjustment data memo column indicates that the address data is fixed and same as the initial value.

Note 2: The initial adjustment data value is the value after “Page D Data Initialization” and “Page D Data Modification” have been executed. It is different from the value after all adjustments have been executed.

Note 3: No mark : Common
() : AEP/UK model
[] : E/Tourist model

Address	Adjustment Data		
	NTSC	PAL	Memo Column
10	00	00	←
11	00	00	←
12	00	00	←
13	02	04	←
14	57	(56)[57]	←
15	03	(01)[03]	←
16	1F	1F	←
17	07	07	←
18	0F	0F	←
19	0D	0D	←
1A	73	73	←
1B	00	00	←
1C	04	04	←
1D	71	71	←
1E	39	39	←
1F	1F	1F	←
20	39	39	←
21	C0	(20)[C0]	←
22	00	00	←
23	07	7E	←
24	0A	0B	←
25	00	00	←
26	0C	0D	←
27	6A	5A	←
28	70	70	
29	77	77	
2A	A0	A0	
2B	AD	AD	
2C	C0	C0	
2D	0C	0C	←
2E	03	03	←
2F	00	00	←
30	04	04	←
31	E7	E7	←
32	05	05	←
33	73	73	←
34	24	24	←
35	CC	CC	←
36	07	07	←
37	70	70	

Table 5-3-3 (1).

Address	Adjustment Data		
	NTSC	PAL	Memo Column
38	C9	C9	←
39	02	02	←
3A	02	02	←
3B	04	04	←
3C	0A	0A	←
3D	32	32	←
3E	06	06	←
3F	00	00	←
40	01	01	←
41	01	01	←
42	00	00	
43	00	00	
44	00	00	
45	08	08	←
46	00	00	←
47	46	46	←
48	00	00	←
49	2A	2A	←
4A	83	83	←
4B	D6	D6	←
4C	00	00	←
4D	00	00	←
4E	00	00	←
4F	00	00	←
50	FF	FF	←
51	C8	C8	←
52	96	96	←
53	64	64	←
54	46	46	←
55	32	32	←
56	1E	1E	←
57	14	14	←
58	10	10	←
59	10	10	←
5A	72	72	←
5B	79	79	←
5C	00	00	←
5D	09	09	←
5E	AC	AC	←
5F	20	20	←
60	00	00	←
61	72	72	
62	70	70	
63	9D	9D	
64	CB	B5	
65	97	97	
66	82	82	←

Table 5-3-3 (2).

Address	Adjustment Data		
	NTSC	PAL	Memo Column
67	80	80	←
68	A3	8D	
69	00	00	←
6A	78	78	←
6B	BF	BF	←
6C	7C	7C	
6D	61	61	
6E	33	33	←
6F	65	65	←
70	70	70	
71	60	60	
72	A1	A1	
73	80	80	←
74	80	80	←
75	70	70	←
76	90	90	
77	5A	5A	
78	70	70	
79	79	76	←
7A	B0	B0	
7B	00	00	←
7C	00	00	←
7D	00	00	←
7E	E8	E8	←
7F	00	00	←
80	38	38	←
81	00	00	←
82	20	20	←
83	20	20	←
84	02	02	←
85	04	04	←
86	85	E3	←
87	85	E3	←
88	38	38	←
89	00	00	←
8A	20	20	←
8B	20	20	←
8C	02	02	←
8D	00	00	←
8E	12	12	←
8F	40	40	←
90	40	40	
91	20	20	
92	20	20	
93	00	00	←
94	40	40	
95	40	40	

Table 5-3-3 (3).

Address	Adjustment Data		
	NTSC	PAL	Memo Column
96	40	40	
97	40	40	
98	4C	4C	
99	31	31	←
9A	34	34	←
9B	2F	2F	←
9C	22	22	←
9D	0F	0F	←
9E	58	58	←
9F	97	97	←
A0	62	62	←
A1	A6	A6	←
A2	6E	6E	←
A3	00	00	←
A4	01	01	←
A5	00	1C	←
A6	CD	D9	←
A7	5B	79	←
A8	5B	61	←
A9	C0	C0	←
AA	01	01	←
AB	03	03	←
AC	02	02	←
AD	01	01	←
AE	24	24	←
AF	00	09	←
B0	00	00	←
B1	04	04	←
B2	00	00	←
B3	00	00	←
B4	FF	FF	←
B5	FF	FF	←
B6	FF	FF	←
B7	FF	FF	←
B8	01	01	←
B9	00	00	←
BA	00	00	←
BB	00	00	←
BC	00	00	←
BD	00	00	←
BE	00	00	←
BF	00	00	←
C0	70	70	←
C1	99	99	←
C2	B2	B2	←
C3	AE	AE	←
C4	7D	7D	←

Table 5-3-3 (4).

Address	Adjustment Data		
	NTSC	PAL	Memo Column
C5	A6	A6	←
C6	97	97	←
C7	D9	D9	←
C8	CC	CC	←
C9	BC	BC	←
CA	60	60	←
CB	A0	A0	←
CC	94	94	←
CD	44	44	←
CE	22	22	←
CF	22	22	←
D0	19	19	←
D1	47	47	←
D2	75	75	←
D3	A5	A5	←
D4	D5	D5	←
D5	FF	FF	←
D6	D9	D9	←
D7	AD	AD	←
D8	77	77	←
D9	50	50	←
DA	10	10	←
DB	00	00	←

Table 5-3-3 (5).

3-1-8. Page C Address

Note 1: The ← mark shown in the adjustment data memo column indicates that the address data is fixed and same as the initial value.

Note 2: The initial adjustment data value is the value after “Page C Data Initialization” have been executed. It is different from the value after all adjustments have been executed.

Address	Adjustment Data		
	NTSC	PAL	Memo Column
00	DC	DC	←
01	BF	BF	←
02	AD	AD	←
03	87	87	←
04	72	72	←
05	2F	2F	←
06	A8	A8	←
07	10	10	←
08	7E	7F	←
09	FF	FF	←
0A	FF	FF	←
0B	DF	DF	←
0C	FF	FF	←
0D	BF	BF	←
0E	FF	FF	←
0F	FF	FF	←
10	B4	B4	←
11	FF	FF	←
12	FD	FD	←
13	FF	F4	←
14	FE	FE	←
15	FF	FF	←
16	00	00	←
17	FF	FF	←
18	DF	DF	←
19	7F	7E	←
1A	FF	FF	←
1B	FF	FF	←
1C	05	05	←
1D	FF	FF	←
1E	FF	FF	←
1F	FF	FF	←
20	24	24	←
21	6E	6E	←
22	7F	7F	←
23	7F	7F	←
24	20	20	←
25	68	68	←
26	65	65	←
27	5F	5F	←
28	28	28	←
29	60	60	←

Table 5-3-4 (1).

Address	Adjustment Data		
	NTSC	PAL	Memo Column
2A	01	01	←
2B	4F	4F	←
2C	00	00	←
2D	80	80	←
2E	40	40	←
2F	03	03	←
30	00	00	
31	00	00	
32	00	00	
33	00	00	
34	00	00	
35	00	00	
36	00	00	
37	00	00	
38	00	00	
39	00	00	
3A	00	00	
3B	00	00	
3C	F0	F0	
3D	F0	F0	
3E	70	70	
3F	70	70	
40	C0	C0	
41	C0	C0	
42	90	90	
43	90	90	
44	90	90	
45	65	65	←
46	80	80	
47	C0	C0	
48	40	40	←
49	60	60	←
4A	33	33	←
4B	00	00	←
4C	00	00	
4D	00	00	
4E	00	00	
4F	00	00	
50	40	40	←
51	1E	1E	←
52	FF	FF	←
53	FF	FF	←
54	00	00	←
55	00	00	←
56	08	08	←
57	04	04	←
58	16	16	←

Table 5-3-4 (2).

Address	Adjustment Data		
	NTSC	PAL	Memo Column
59	00	00	
5A	8C	8C	←
5B	02	02	←
5C	00	00	←
5D	00	00	←
5E	02	02	←
5F	00	00	←
60	00	00	←
61	00	00	←
62	03	03	←
63	00	00	←
64	32	32	←
65	20	20	←
66	64	64	←
67	08	08	←
68	00	00	←
69	00	00	←
6A	00	00	←
6B	03	03	←
6C	03	03	←
6D	00	00	←
6E	00	00	←
6F	00	00	

Table 5-3-4 (3).

3-2. SYSTEM CONTROLLER SYSTEM ADJUSTMENTS

1. Initializing the Page D Data

Note: If the page D data is initialized, the following adjustments must be performed again.

“LCD System Adjustments”, “Color Electronic View finder System Adjustments”, “Battery Down Adjustment”, and “Base Band Block Adjustment” and “Clock Adjustment” of the “Video System Adjustment”.

Adjustment Page	D
Adjustment Address	10 to DB

Initializing Method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: 2D to page: 2, address: 00, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 2D to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
- 4) Check that the data of page: 2, address: 02 is “01”.
- 5) Perform “Changing the Page D Data”.

2. Changing the Page D Data

If the page D data has been initialized, change the data as shown in the following table by manual input.

Note 1: Before changing the data, set data: 01 to page: 0, address: 01.

Note 2: When changing the data, press the PAUSE button of the adjusting remote commander each time when setting new data, since the data is written in the non-volatile memory.

Note 3: After changing the data, set data: 00 to page: 0, address: 01.

Note 4: No mark : Common
(): AEP/UK model
[]: E/Tourist model

Address	Data	
	NTSC	PAL
13	02	04
14		(56)[57]
15		(01)[03]
1A	73	73
1E	39	39
20	39	39
21	C0	(20)[CO]
23		7E
24		0B
26		0D
27		5A
2F	00	00
30	04	04
38	C9	C9
3E	06	06
49	2A	2A
4A	83	83
4B	D6	D6
5B	79	79
60		00
61	72	72
62	70	70
63	9D	9D
64	CB	B5
65	97	97
66	82	82
67	80	80
68	A3	8D
6A	78	78
6B	BF	BF
6C	7C	7C
6D	61	61
6E	33	33
6F	65	65
70	70	70
71	60	60
72	A1	A1

Address	Data	
	NTSC	PAL
73		80
74		80
75	70	70
76		90
77		5A
78		70
79	79	76
7A		B0
7E	E8	E8
80		38
81		00
82	20	20
83	20	20
84	02	02
85	04	04
86	85	E3
87	85	E3
88		38
89		00
8A	20	20
8B	20	20
8C	02	02
8D	00	00
8E		12
8F		40
99	31	31
A5		1C
A6		D9
A7		79
A8		61
AC	02	02
AF		1C
D6	D9	D9
D7	AD	AD
D8	77	77
D9	50	50
DA	10	10
DB	00	00

3. Initializing the Page C Data

Note: If the page C data is initialized, the following adjustments must be performed again.

All RF block adjustments of “Video System Adjustments” and “Servo System Adjustments”.

Adjustment Page	D
Adjustment Address	00 to 6F

Initializing Method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: 01 to page: 4, address: 02, and press the PAUSE button of the adjusting remote commander.
- 3) Check that the data of page: 4, address: 02 changes in the order of “01”, “03”, “05”, “00”.
- 4) Change the data as shown in the following table by manual input.
 (Press the PAUSE button of the adjusting remote commander each time when setting new data to write the data in the non-volatile memory.)

Address	Data	
	NTSC	PAL
08		7F
0B	DF	DF
13		F4
19		7E
2A	01	01
66	64	64

- 5) Set data: 00 to page: 0, address: 01.

4. Battery End Adjustment

Regulates the battery end voltage.

If the voltage changes, the life of the battery will be shortened, or the battery end image will be distorted.

Mode	Camera recording
Signal	Arbitrary
Measurement Point	LCD display of adjusting remote commander
Measuring Instrument	
Adjustment Page	D
Adjustment Address	28 to 2C, 37

Setting of switch

- 1) Auto focus switch Off

Connection

- 1) Connect the regulated power supply and digital voltmeter to battery terminals as shown in the figure 5-3-4.

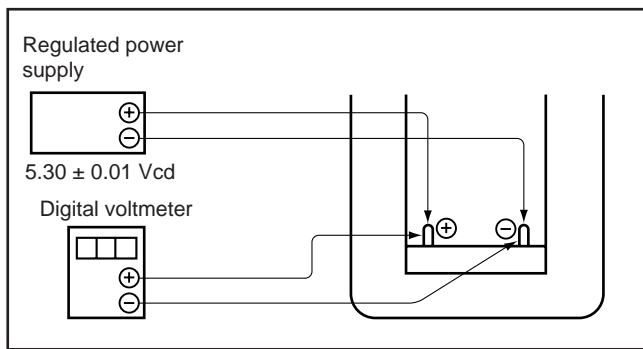


Fig. 5-3-4.

Adjusting method:

- 1) Adjust the regulated power supply output voltage so that the digital voltmeter display becomes 6.1 ± 0.1 Vdc.
- 2) Turn off the regulated power supply.
- 3) Turn on the HOLD switch of the adjusting remote commander.
- 4) Turn on the regulated power supply.
- 5) Set data: 01 to page: 0, address: 01.
- 6) Set the camera recording mode.
- 7) Decrease the voltage so that the digital voltmeter display becomes 5.30 ± 0.01 Vdc.
- 8) Select page: 2, address: 51, and read the data displayed on the adjusting remote commander, and take this value as D28.
- 9) Set D28 to page: D, address: 28, and press the PAUSE button of the adjusting remote commander.
- 10) Convert D28 to a decimal digit, and take this value as D28'. (Refer to the Hexadecimal-Decimal Conversion Table in "Data Processing" in "Service Mode".)
- 11) Calculate the adjustment data (decimal) from the following equations (decimal calculation), convert the data to hexadecimal digits, and input to each adjustment addresses.
Address: 29 $D_{29}' = D_{28}' + 11$
Address: 2A $D_{2A}' = D_{28}' + 36$
Address: 2B $D_{2B}' = D_{28}' + 58$
Address: 2C $D_{2C}' = D_{28}' + 66$
Address: 37 $D_{37}' = D_{28}'$
Note: After setting the data, be sure to press the PAUSE button of the adjusting remote commander.
- 12) Set data: 00 to page: 0, address: 01.
- 13) Turn off the power supply.

3-3. SERVO SYSTEM ADJUSTMENTS

1. T Reel FG Duty Adjustment and CSerr Adjustment (RJ-74 Board)

Measurement Point	Adjusting remote commander display
Measuring Instrument	data
Adjustment Page	C
Adjustment Address	59, 6F
Specified Value	CSerr Adjustment: The data of page: 3, address: 03 is "00". Treel FG Duty Adjustment: The data of page: C, address: 6F is "01," or "02", "03".

Adjusting Method

- 1) Set the power switch to "VTR" or "PLAYER".
- 2) Set to the loading completed state without inserting the cassette.
- 3) Connect the adjusting remote commander, and set the HOLD switch to ON.
- 4) Set the data of page: 0, address: 01 to 01.
- 5) Set the data of page: 3, address: 09 to 00, and press the PAUSE button of the adjusting remote commander.
- 6) Set data: 1A to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander. (to start up automatic Treel FG Duty & CSerr Adjustments".)
- 7) Check that the data of page: 3, address: 02 is changed from "17" to "00".
- 8) Set the HOLD switch of the adjusting remote commander to OFF, and wait more than 2 seconds.
- 9) Set the HOLD switch of the adjusting commander to ON.
- 10) Check that the data of page: 3, address: 08 and that of page: C, address: 59 are the same.
- 11) If the data of page: 3, address: 03 is "00", it means that the automatic CSerr adjustment has ended normally.
- 12) Check that the data of page: 3, address: 04 and that of page: C, address: 6F are the same.
- 13) If the data of page: C, address: 6F is "01", or "02", "03", it means that the automatic Treel FG adjustment has ended normally.
- 14) Set data: 00 to page: 0, address: 01.
- 15) Turn OFF the power supply.

2. Switching Position Adjustment (RJ-74 Board)

Mode	Playback
Signal	SW/OL reference tape
Measurement Point	Display data of page: 3, address: 03 of
Measuring Instrument	the adjusting remote commander.
Adjustment Page	C
Adjustment Address	4C, 4D, 4E, 4F
Specified Value	"00"

Adjusting Method

- 1) Set the data of page: 0, address: 01 to 01.
- 2) Set the data of page: 3, address: 01 to 0E, and press the PAUSE button of the adjusting remote commander.
- 3) Check that the data of page: 3, address: 02 has changed from "OE" to "00".
- 4) Check that the data of page: 3, address: 03 is "00".
- 5) Set the HOLD switch of the adjusting remote commander to OFF, and wait more than 2 seconds (so that the adjustment data is automatically written in page: C, addresses: 4C to 4F).
- 6) Set data: 00 to page: 0, address: 01.
- 7) Turn OFF the power supply.

3-4. VIDEO SYSTEM ADJUSTMENTS

3-4-1. RF Block Adjustments

1. Recording Current Adjustment (RJ-74 Board)

Mode	VTR stop
Measurement Point	ODDch adjustment CH1: Pin ⑥ of CN2708 (CL2719) CH2: Pin ⑤ of CN2708 (CL2718) EVENch adjustment CH1: Pin ⑨ of CN2708 (CL2722) CH2: Pin ⑧ of CN2708 (CL2721)
Measuring Instrument	Oscilloscope ADD mode CH2 INV mode
Adjustment Page	C
Adjustment Address	3E, 3F
Specified Value	$A = 3.1 \pm 0.1 \text{ Vp-p}$

Connection: Disconnect CN2708 and connect as follows.

- 1) ODDch adjustment: Connect a 180 Ω resistor between Pin ⑥ of CN2708 (CL2719) and Pin ⑤ of CN2708 (CL2718).
- 2) EVENch adjustment: Connect a 180 Ω resistor between Pin ⑨ of CN2708 (CL2722) and Pin ⑧ of CN2708 (CL2721).
180 Ω resistor (Parts code: 1-249-408-11)

Adjusting method:

- 1) Equalize the vertical range of CH1 and CH2 of the oscilloscope.
- 2) Set the oscilloscope to the ADD mode, and set CH2 to the INV mode.
- 3) Set data: 01 to page: 0, address: 01.
- 4) Set data: 0C to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
- 5) Set data: 01 to page: 3, address: 34.
- 6) Change the data of page: C, address: 3F (ODDch adjustment) or address: 3E (EVENch adjustment), and adjust the signal voltage (A) to the specified value, press the PAUSE button on the adjustment remote commander.
- 7) Set data: 04 to page: 3, address: 34.
- 8) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
- 9) Set data: 00 to page: 0, address: 01.

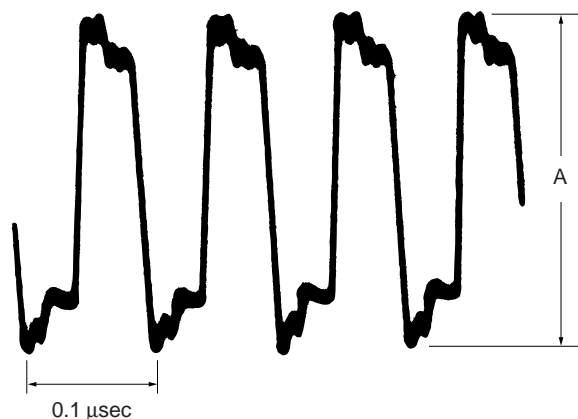


Fig. 5-3-5.

2. PLL fo Adjustment (RJ-74 Board)

Mode	VTR stop
Measurement Point	Display data of page: 3, address: 04
Measuring Instrument	
Adjustment Page	C
Adjustment Address	3D, 3C
Specified Value	Displayed data is "FD" to "FF", "00" to "03". ("FF", "00" are center values)

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: 05 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 04 to page: 3, address: 36.
- 4) Check that the average value D04 of the displayed data of page: 3, address: 04 is "FD" to "FF" or "00" to "03". If outside this range, change the data of page: C, address: 3C, and check again. [If D04 is "80" to "FC"]
Decrease the data of page: C, address: 3C. (As the data is to be rewritten, press the PAUSE button of the adjusting remote commander.)
[If D04 is "04" to "7F"]
Increase the data of page: C, address: 3C. (As the data is to be rewritten, press the PAUSE button of the adjusting remote commander.)
- 5) Set data: 05 to page: 3, address: 36.
- 6) Check that the average value D04 of the displayed data of page: 3, address: 04 is "FD" to "FF" or "00" to "03". If outside this range, change the data of page: C, address: 3D, and check again. [If D04 is "80" to "FC"]
Decrease the data of page: C, address: 3D. (As the data is to be rewritten, press the PAUSE button of the adjusting remote commander.)
[If D04 is "04" to "7F"]
Increase the data of page: C, address: 3D. (As the data is to be rewritten, press the PAUSE button of the adjusting remote commander.)
- 7) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
- 8) Set data: 02 to page: 3, address: 36.
- 9) Set data: 00 to page: 0, address: 01.

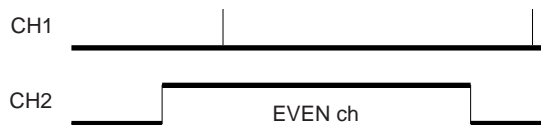
3. AGC Center Level Adjustment (RJ-74 Board)

Mode	Camera recording/playback (LP mode)
Subject	Arbitrary
Signal	Playback signal of recorded tape
Measurement Point	CH1: Pin ⑮ of CN9902 (C1ERP) CH2: Pin ⑥ of CN9902 (JSWP)
Measuring Instrument	Oscilloscope Trigger source: CH2
Adjustment Page	C
Adjustment Address	44

Adjusting method:

- 1) Record camera images for two minutes on any tape.
- 2) Set data: 01 to page: 0, address: 01.
- 3) Write the following data in page: C, addresses: 40 to 44, 4B, 5A.
(To write the data, press the PAUSE button of the adjusting remote commander each time data is set.)
Page: C, address: 40, data: C0
Page: C, address: 41, data: C0
Page: C, address: 42, data: 90
Page: C, address: 43, data: 90
Page: C, address: 44, data: 90
Page: C, address: 4B, data: 80
Page: C, address: 5A, data: 00
- 4) Playback the part recorded with the camera images.
- 5) Increase the data of page: C, address: 44, read the data D1 when the CH1 pulse is set to the whole audio and video areas.
- 6) Decrease the data of page: C, address: 44, and read the data D2 when the CH1 pulse is set to the whole audio and video areas.
- 7) Obtain the average value of D1 and D2, and take it as D3.
- 8) Set D3 to page: C, address: 44, and press the PAUSE button of the adjusting remote commander.
- 9) Set data: 00 to page: C, address: 4B, and press the PAUSE button of the adjusting remote commander.
- 10) Set data: 8C to page: C, address: 5A, and press the PAUSE button of the adjusting remote commander.
- 11) Set data: 00 to page: 0, address: 01.
- 12) After completing the adjusting, perform 5. AEQ Adjustment.

When the CH1 pulse is not set.



When the CH1 pulse is set.

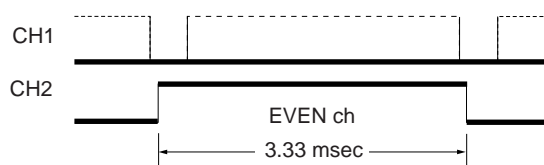


Fig. 5-3-6.

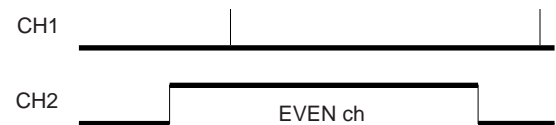
4. CLK DELAY Adjustment (RJ-74 Board)

Mode	Camera recording/playback (LP mode)
Subject	Arbitrary
Signal	Playback signal of recorded tape
Measurement Point	CH1: Pin ⑮ of CN9902 (C1ERP) CH2: Pin ⑥ of CN9902 (JSWP)
Measuring Instrument	Oscilloscope Trigger source: CH2
Adjustment Page	C
Adjustment Address	47

Adjusting method:

- 1) Record camera images for two minutes on any tape.
- 2) Set data: 01 to page: 0, address: 01.
- 3) Write the following data in page: C, addresses: 40 to 43.
(To write the data, press the PAUSE button of the adjusting remote commander each time data is set.)
Page: C, address: 40, data: C0
Page: C, address: 41, data: C0
Page: C, address: 42, data: 90
Page: C, address: 43, data: 90
Page: C, address: 47, data: C0
Page: C, address: 4B, data: 80
Page: C, address: 5A, data: 00
- 4) Playback the part recorded with the camera images.
- 5) Increase the data of page: C, address: 47, read the data D1 when the CH1 pulse is set to the whole audio and video areas.
- 6) Decrease the data of page: C, address: 47, and read the data D2 when the CH1 pulse is set to the whole audio and video areas.
- 7) Obtain the average value of D1 and D2, and take it as D3.
- 8) Set D3 to page: C, address: 47, and press the PAUSE button of the adjusting remote commander.
- 9) Set data: 00 to page: C, address: 4B, and press the PAUSE button of the adjusting remote commander.
- 10) Set data: 8C to page: C, address: 5A, and press the PAUSE button of the adjusting remote commander.
- 11) Set data: 00 to page: 0, address: 01.
- 12) After completing the adjusting, perform 5. AEQ Adjustment.

When the CH1 pulse is not set.



When the CH1 pulse is set.

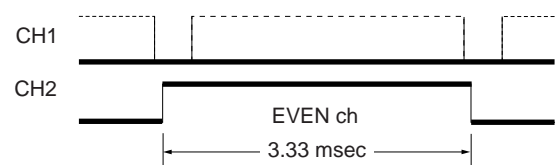


Fig. 5-3-7.

5. AEQ Adjustment (RJ-74 Board)

Mode	Camera recording/playback (LP mode)
Subject	Arbitrary
Measurement Point	Pin ⑧ of CN9902 (RF MONITOR)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	40, 41, 42, 43, 5A

Note 1: Connect a 75Ω resistor between Pin ⑧ of CN9902 and Pin ⑦ (GND) of CN9902.

75Ω resistor (Parts code: 1-247-804-11)

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: 80 to page: C, address: 4B, and press the PAUSE button of the adjusting remote commander.
- 3) Write data in page: C, addresses: 40 to 43, and 5A as shown in the following table.
(To write the data, press the PAUSE button of the adjusting remote commander each time data is set.)

Address	Data
40	C0
41	C0
42	90
43	90
5A	00

- 4) Record for one minute from the tape top.
- 5) Rewind the tape, and play back from the tape top.
- 6) When the RF output stabilizes, set data: 07 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
- 7) About 20 to 30 seconds after pressing the PAUSE button, check that the data of page: 3, address: 02 changes from "07" to "00".
- 8) Check that the data of page: 3, address: 03 is the following value.
When "00": Normal
When "01": EVENch is faulty
When "02": ODDch is faulty
When "03": EVENch and ODDch are faulty
Perform the following procedure only when "00" is displayed.
- 9) Read the data of page: 3, address: 04 to 07, and take the values as D04, D05, D06, and D07.
- 10) Set D04 to page: C, address: 40, and press the PAUSE button of the adjusting remote commander.
- 11) Set D05 to page: C, address: 42, and press the PAUSE button of the adjusting remote commander.
- 12) Set D06 to page: C, address: 41, and press the PAUSE button of the adjusting remote commander.
- 13) Set D07 to page: C, address: 43, and press the PAUSE button of the adjusting remote commander.
- 14) Set data: 8C to page: C, address: 5A, and press the PAUSE button of the adjusting remote commander.
- 15) Set data: 00 to page: C, address: 4B, and press the PAUSE button of the adjusting remote commander.
- 16) Set data: 00 to page: 0, address: 01.

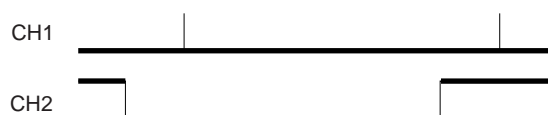
6. PLL Capture Range Adjustment (RJ-74 Board)

Mode	Camera recording/playback (LP mode)
Subject	Arbitrary
Signal	Playback signal of recorded tape
Measurement Point	CH1: Pin ⑩ of CN9902 (C1ERP) CH2: Pin ⑥ of CN9902 (JSWP)
Measuring Instrument	Oscilloscope Trigger source: CH2
Adjustment Page	C
Adjustment Address	46

Adjusting method:

- 1) Record camera images for two minutes on any tape.
- 2) Set data: 01 to page: 0, address: 01.
- 3) Write the following data in page: C, addresses: 4B and 5A.
(To write the data, press the PAUSE button of the adjusting remote commander each time data is set.)
Page: C, address: 4B, data: 80
Page: C, address: 5A, data: 00
- 4) Playback the part recorded with the camera images.
- 5) Set data: 80 to page: C, address: 46, and press the PAUSE button of the adjusting remote commander.
- 6) Set the data of page: C, address: 46 to "60", and check that the pulse is not set at the audio area head of the C1ERP waveform's ODDch of the oscilloscope (CH1).
- 7) Set the data of page: C, address: 46 to "A0", and check that the pulse is not set at the audio area head of the C1ERP waveform's ODDch of the oscilloscope (CH1).
After confirming steps 6) and 7), proceed to step 12).
- 8) If the pulse is set in steps 6) and 7), increase the data of page: C, address: 46 from "80", and read the data D1 when the pulse is set at the audio area head of CH1.
- 9) Decrease the data of page: C, address: 46 from "80", and read the data D2 when the pulse is set at the audio area head of CH1.
- 10) Obtain the average value of D1 and D2, and take it as D3.
- 11) Set D3 to page: C, address: 46, and press the PAUSE button of the adjusting remote commander.
- 12) Set data: 00 to page: C, address: 4B, and press the PAUSE button of the adjusting remote commander.
- 13) Set data: 8C to page: C, address: 5A, and press the PAUSE button of the adjusting remote commander.
- 14) Set data: 00 to page: 0, address: 01.

When the pluse is not set at the audio area head.



When the pluse is set at the audio area head.

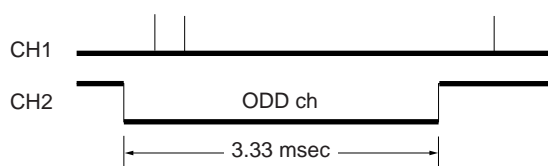


Fig. 5-3-8.

3-4-2. Base Band Block Adjustment

1. Composite Output Y Level Adjustment (CB-58 Board)

Set the Y signal level of the composite video output signal.

Mode	VTR stop
Signal	No signal
Measurement Point	Video signal terminal of AUDIO/VIDEO OUT jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	96
Specified Value	A = 286 ± 6 mV (NTSC) A = 300 ± 6 mV (PAL)

Note1: Insert a plug in the AUDIO/VIDEO OUT jack.

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Change the data of page: D, address: 96, and set the sync signal level(A) to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Set data: 00 to page: 0, address: 01.
- 5) Perform "Composite Output Chroma Level Adjustment".

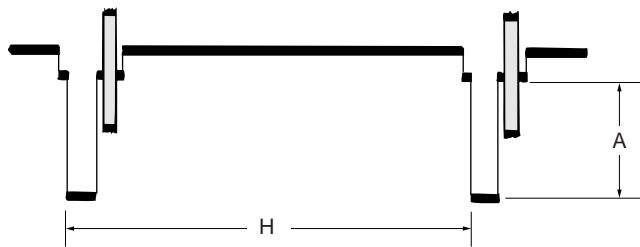


Fig. 5-3-9.

2. Composite Output Chroma Level Adjustment (CB-58 Board)

Set the chroma signal level of the composite video output signal.

Mode	VTR stop
Signal	No signal
Measurement Point	Video signal terminal of AUDIO/VIDEO OUT jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	97
Specified Value	A = 286 ± 6 mV (NTSC) A = 300 ± 6 mV (PAL)

Note1: Insert a plug in the AUDIO/VIDEO OUT jack.

Note2: Perform "Composite Output Y Level Adjustment" before this adjustment.

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Change the data of page: D, address: 97, and set the burst signal level(A) to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Set data: 00 to page: 0, address: 01.
- 5) Perform "S-C Output Level Adjustment".

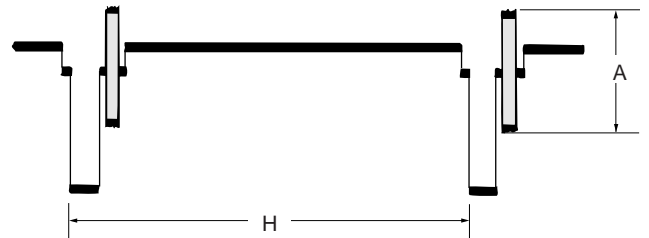


Fig. 5-3-10.

3. S-C Output Level Adjustment (CB-58 Board)

Set the chroma signal level of the S video output signal.

Mode	VTR stop
Signal	No signal
Measurement Point	Chroma signal terminal of S VIDEO output jack (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	94
Specified Value	A = 286 ± 6 mV (NTSC) A = 300 ± 6 mV (PAL)

Note1: Insert a plug in the S VIDEO output jack.

Note2: Perform “Composite Output Y Level Adjustment” and “Composite Output Chroma Level Adjustment” before this adjustment.

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Change the data of page: D, address: 94, and set the burst signal level(A) to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Set data: 00 to page: 0, address: 01.

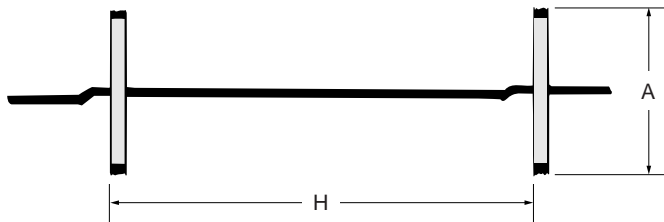


Fig. 5-3-11.

4. S-Y Output Level Adjustment (CB-58 Board)

Set the Y signal level of the S video output signal.

Mode	VTR stop
Signal	No signal
Measurement Point	Y signal terminal of S VIDEO output jack (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	95
Specified Value	A = 286 ± 6 mV (NTSC) A = 300 ± 6 mV (PAL)

Note1: Insert a plug in the S VIDEO output jack.

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Change the data of page: D, address: 95, and set the sync signal level (A) to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Set data: 00 to page: 0, address: 01.

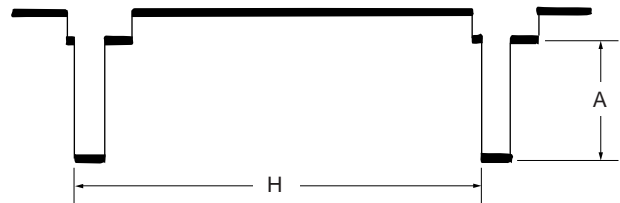


Fig. 5-3-12.

3-4-3. Clock Adjustment

1. IC1900 27MHz XTAL fo Adjustment (RJ-74 Board)

Set the sub-carrier frequency of the video output signal in VTR mode.
Adjusting method:

Mode	VTR stop
Signal	No signal
Measurement Point	R1901 (Pin ② of IC1900)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	98
Specified Value	$f = 13500000 \pm 68\text{Hz}$ (NTSC) $f = 13500000 \pm 68\text{Hz}$ (PAL)

- 1) Set data: 01 to page: 0, address: 01.
- 2) Change the data of page: D, address: 98, and set the clock frequency (f) to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Set data: 00 to page: 0, address: 01.

2. IC1900 VCO Operation Check (RJ-74 Board)

Mode	VTR stop
Signal	No signal
Measurement Point	Display data of page: 2, address: 0E of
Measuring Instrument	the adjusting remote commander
Specified Value	“C0” to “FF”

Checking method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: 02 to page: 2, address: 05 and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 03 to page: D, address: B0 and press the PAUSE button of the adjusting remote commander.
- 4) Check that the display data of page: 2, address: 0E is “C0” to “FF”.
- 5) Set data: 05 to page: D, address: B0 and press the PAUSE button of the adjusting remote commander.
- 6) Check that the display data of page: 2, address: 0E is “C0” to “FF”.
- 7) Set data: 00 to page: D, address: B0 and press the PAUSE button of the adjusting remote commander.
- 8) Set data: 00 to page: 2, address: 05 and press the PAUSE button of the adjusting remote commander.
- 9) Set data: 00 to page: 0, address: 01.

3. IC6101 41.85MHz VCO Operation Check (RJ-74 Board)

Mode	Camera recording
Subject	Arbitrary
Measurement Point	Display data of page: 3, address: 39 of
Measuring Instrument	the adjusting remote commander
Specified Value	“37” to “C9”

Checking method:

- 1) Check that the display data of page: 3, address: 39 is “37” to “C9”.

3-4-4. BIST Check

1. Playback System Check

- 1) Set the POWER switch to VTR (or PLAYER) position.
- 2) Connect the adjusting remote commander and set the HOLD switch to HOLD (SERVICE) position.
- 3) Playback the BIST check tape.

IC1701(D1) Playback System Check

- 4) Set data: 04 to page: 4, address: 11 and press the PAUSE button.
- 5) Set data: 00 to page: 4, address: 11 and press the PAUSE button.
- 6) Set data: 03 to page: 4, address: 13 and press the PAUSE button. (The data will be automatically return to “00”).
- 7) When the IC1701 (D1) → IC1601 (U1) playback system is normal, following data will be displayed in page: 4, address: 14 and 15.

Page	Address	Data
4	15	E5 (NTSC), 27 (PAL)
4	14	11 (NTSC), CA (PAL)

- 8) When the IC1701(D1) → IC3501(INDI) playback system is normal, following data will be displayed in page: 4, address: 16 and 17.

Page	Address	Data
4	17	C0 or BA (NTSC), DC (PAL)
4	16	6E or 04 (NTSC), 44 (PAL)

- 9) When the IC1701 (D1) → IC1901 (A1) playback system is normal, following data will be displayed in page: 4, address: 18 and 19.

Page	Address	Data
4	19	33 or B2 (NTSC), A2 (PAL)
4	18	59 or 19 (NTSC), 03 (PAL)

IC1901(A1) Playback System Check

- 10) Set data: 10 to page: 4, address: 11 and press the PAUSE button.
- 11) Set data: 00 to page: 4, address: 11 and press the PAUSE button.
- 12) Set data: 04 to page: 4, address: 13 and press the PAUSE button. (The data will be automatically return to “00”).
- 13) When the IC1901(A1) playback system is normal, following data will be displayed in page: 4, address: 14 and 15.

Page	Address	Data
4	15	7B (NTSC), CC (PAL)
4	14	B5 (NTSC), C0 (PAL)

- 14) Set data: 08 to page: 4, address: 11 and press the PAUSE button.
- 15) Set data: 07 to page: 4, address: 13 and press the PAUSE button. (The data will be automatically return to “00”).
- 16) Set data: 00 to page: 4, address: 11 and press the PAUSE button.
- 17) Perform “Recording System Check”.

2. Recording System Check

Note1: Perform "Playback System Check" before this check.

Note2: Close the LCD panel.

- 1) Playback the BIST check tape.
- 2) Input the following data in order.

Note: Press the PAUSE button each time set the data.

Page	Address	Data
4	41	01
4	0F	02
4	0E	01
4	40	01
4	0F	0A
4	40	00
4	40	01
4	0F	0E
4	40	00
4	40	01
4	0F	8E
4	40	00

- 3) Set to the stop mode.
- 4) While keep the HOLD switch of the adjusting remote commander at ON (SERVICE) position, eject the BIST check tape and insert a tape for recording in place of the tape.
- 5) Set data: 01 to page: 0, address: 01.
- 6) Set data: 57 to page: D, address: 14, only for AEP and UK models, and press the PAUSE button.
- 7) Set data: (07)[05] to page: D, address: 15, and press the PAUSE button.
(): NTSC model, PAL E/Tourist model
[]: PAL AEP/UK model
- 8) Set the HOLD switch of the adjusting remote commander to OFF position.
- 9) Press the REC button and set to the VTR recording mode.
- 10) Set the HOLD switch of the adjusting remote commander to ON (SERVICE) position.
- 11) Set data: 02 to page: 4, address: 11 and press the PAUSE button.
- 12) Set data: 02 to page: 4, address: 13 and press the PAUSE button.
(The data will be automatically return to "00".)
- 13) Set data: 00 to page: 4, address: 11 and press the PAUSE button.

IC1701 (D1) Recording System Check

- 14) Set data: 0D to page: 3, address: 01 and press the PAUSE button.
- 15) Set data: FF to page: 4, address: 1C and press the PAUSE button.
- 16) Set data: 04 to page: 4, address: 11 and press the PAUSE button.
- 17) Set data: 00 to page: 4, address: 11 and press the PAUSE button.
- 18) Set data: 03 to page: 4, address: 13 and press the PAUSE button.
(The data will be automatically return to "00".)

- 19) When the IC1601 (U1) → IC1701 (D1) recording system is normal, following data will be displayed in page: 4, address: 14 and 15.

Page	Address	Data
4	15	C6 (NTSC), F8 (PAL)
4	14	90 (NTSC), 3E (PAL)

- 20) When the IC1701(D1) → IC3501 (INDI) recording system is normal, following data will be displayed in page: 4, address: 16 and 17.

Page	Address	Data
4	17	41 (NTSC), B9 (PAL)
4	16	7D (NTSC), F6 (PAL)

- 21) When the IC1901(A1) → IC1701(D1) recording system is normal, following data will be displayed in page: 4, address: 18 and 19.

Page	Address	Data
4	19	76 (NTSC), CE (PAL)
4	18	B9 (NTSC), E7 (PAL)

- 22) When the IC1701(D1) → IC6101(DX) recording system is normal, following data will be displayed in page: 4, address: 1A and 1B.

Page	Address	Data
4	1B	72 (NTSC), 8C (PAL)
4	1A	37 (NTSC), CD (PAL)

- 23) Set data: 56 to page: D, address: 14, only for AEP and UK models, and press the PAUSE button.
- 24) Set data: (03)[01] to page: D, address: 15, and press the PAUSE button.
(): NTSC model, PAL E/Tourist model
[]: PAL AEP/UK model
- 25) Set data: 00 to page: 0, address: 01.

3-5. IR TRANSMITTER ADJUSTMENTS

Adjust using a IR receiver jig (J-6082-383-A).

Switch setting:

LASER LINK ON (Red LED is lit)

1. IR Video Carrier Frequency Adjustment (CB-58 board)

Mode	VTR stop
Subject	Arbitrary
Measuring point	TP607 of IR receiver jig (RF) (Or Pin ⑩ of IC8401)
Measuring instrument	Frequency counter
Adjusting page	D
Adjusting address	90
Specified value	$f = 11.85 \pm 0.05 \text{ MHz}$

Connection of Equipment

Connect the measuring devices as shown in the following figure, and adjust.

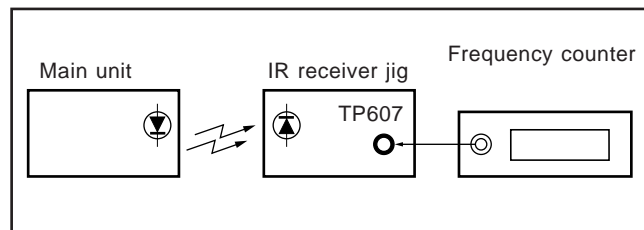


Fig. 5-3-13.

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Set data: 10 to page: 2, address: 12, and press the PAUSE button of the adjusting remote commander.
- 3) Change the data of page: D, address: 90, and set the video carrier frequency (f) to the specified value.
- 4) Press the PAUSE button of the adjusting remote commander.
- 5) Set data: 00 to page: 2, address: 12, and press the PAUSE button of the adjusting remote commander.
- 6) Set data: 00 to page: 0, address: 01.

2. IR Video Deviation Adjustment (CB-58 Board)

Mode	VTR playback
Signal	Audio operation check tape, color bar portion
Measuring point	VIDEO OUT terminal of IR receiver jig (Terminated at 75)
Measuring instrument	Oscilloscope
Adjusting page	D
Adjusting address	91
Specified value	$A = 1.00 \pm 0.05 \text{ V}$

Connection of Equipment

Connect the measuring devices as shown in the following figure, and adjust.

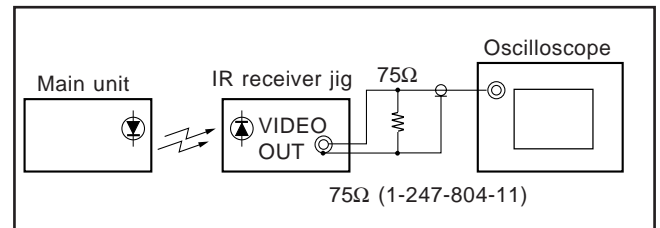
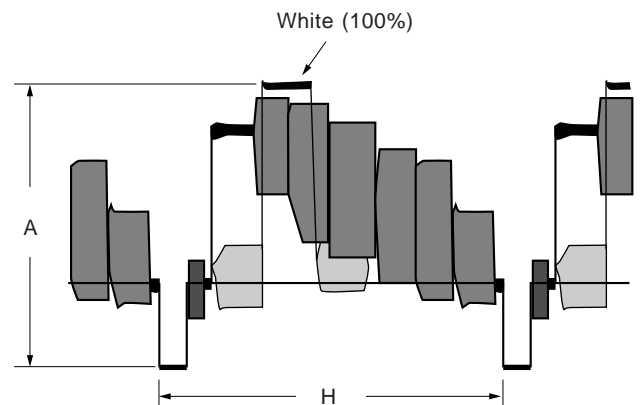


Fig. 5-3-14.

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Change the data of page: D, address: 91, and set the video signal amplitude (A) to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Set data: 00 to page: 0, address: 01.

For NTSC model



For PAL model

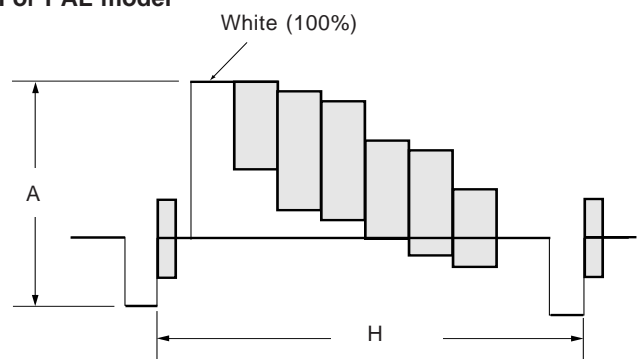


Fig. 5-3-15.

3. IR Audio Deviation Adjustment (CB-58 Board)

Mode	VTR playback
Signal	Audi operation check tape 44.1 kHz EMP ON portion (7.35 kHz audio signal portion)
Measuring point	AUDIO OUT L terminal and AUDIO OUT R terminal of IR receiver jig (Terminated at 47 k)
Measuring instrument	Audio level meter
Adjusting page	D
Adjusting address	92
Specified value	Signal level: -4.0 ± 1.0 dBs Level difference of L and R: Below 2 dB

Connection of Equipment

Connect the measuring devices as shown in the following figure, and adjust.

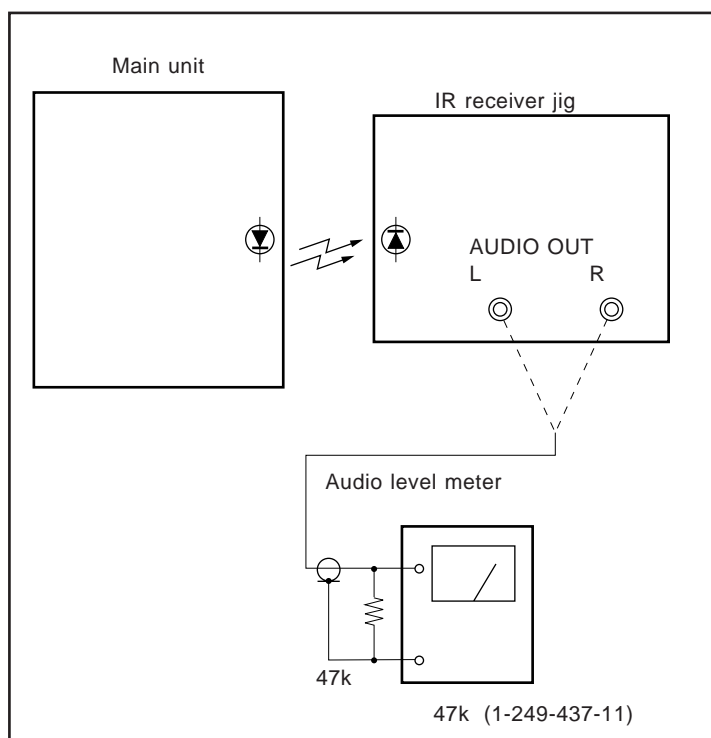


Fig. 5-3-16.

Adjusting method:

- 1) Set data: 01 to page: 0, address: 01.
- 2) Connect the audio level meter to the AUDIO OUT L terminal of the IR receiver jig.
- 3) Change the data of page: D, address: 92, and set the audio signal level of 44.1 kHz EMP ON portion to the specified value.
- 4) Press the PAUSE button of the adjusting remote commander.
- 5) Connect the audio level meter to the AUDIO OUT R terminal of the IR receiver jig.
- 6) Check that the audio level of 44.1 kHz EMP ON portion is within the specified value. If outside, repeat from step 2.
- 7) Set data: 00 to page: 0, address: 01.

3-6. AUDIO SYSTEM ADJUSTMENTS

[Connection of Audio System Measuring Devices]

Connect the audio system measuring devices as shown in Fig. 5-3-17.

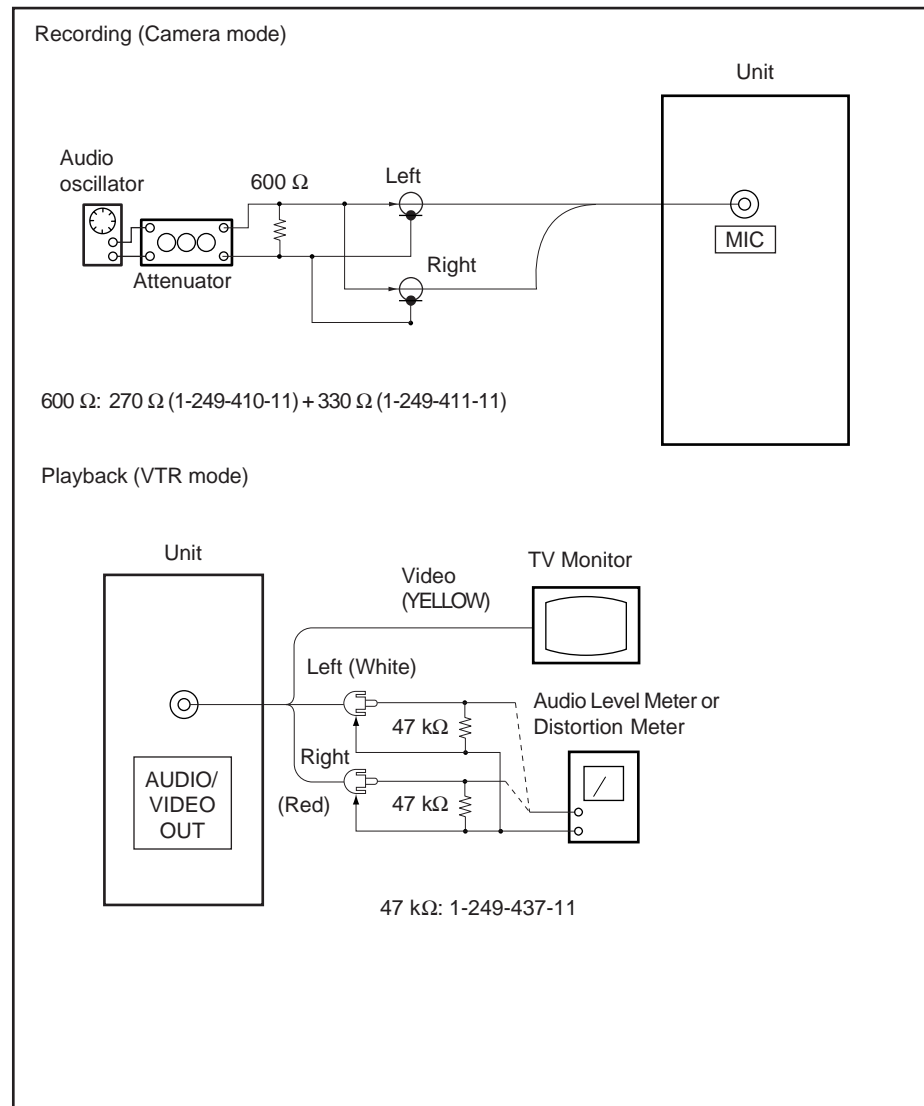


Fig. 5-3-17.

1. Playback Level Check

Mode	VTR playback
Signal	Audio operation check tape
Measurement Point	Audio left or right terminal of AUDIO VIDEO OUT jack
Measuring Instrument	Audio level meter and frequency counter
Specified Value	32kHz mode : 1kHz, 3.0 ± 2 dBs 48kHz mode : 1kHz, 3.0 ± 2 dBs 44.1kHz mode : The 7.35kHz signal level during EMPON is -6 ± 2 dB against the signal level during EMP OFF

Checking method:

- 1) Check that the playback signal level is the specified value.

2. Overall Level Characteristics Check

Mode	Camera recording and playback
Signal	400Hz, -66 dBs signal: MIC jack left and right
Measurement Point	Audio left or right terminal of AUDIO VIDEO OUT jack
Measuring Instrument	Audio level meter
Specified Value	-7.5 ± 3 dBs

Checking method:

- 1) Input the 400Hz, -66 dBs signal in the MIC jack.
- 2) Record in the camera mode.
- 3) Playback the recorded section.
- 4) Check that the 400Hz, signal level is the specified value.

3. Overall Distortion Check

Mode	Camera recording and playback
Signal	400Hz, -66 dBs signal: MIC jack left and right
Measurement Point	Audio left or right terminal of AUDIO VIDEO OUT jack
Measuring Instrument	Audio distortion meter
Specified Value	Below 0.4% (200Hz to 6kHz BPF ON)

Checking method:

- 1) Input the 400Hz, -66 dBs signal in the MIC jack.
- 2) Record in the camera mode.
- 3) Playback the recorded section.
- 4) Check that the distortion is the specified value.

4. Overall Noise Level Check

Mode	Camera recording and playback
Signal	No signal: Insert a shorting plug in the MIC jack
Measurement Point	Audio left or right terminal of AUDIO VIDEO OUT jack
Measuring Instrument	Audio level meter
Specified Value	Below -45 dBs (IHF-A filter ON, 20kHz LPF ON)

Checking method:

- 1) Input the 400Hz, -66 dBs signal in the MIC jack.
- 2) Record in the camera mode.
- 3) Playback the recorded section.
- 4) Check that the noise level is the specified value.

5. Overall Separation Check

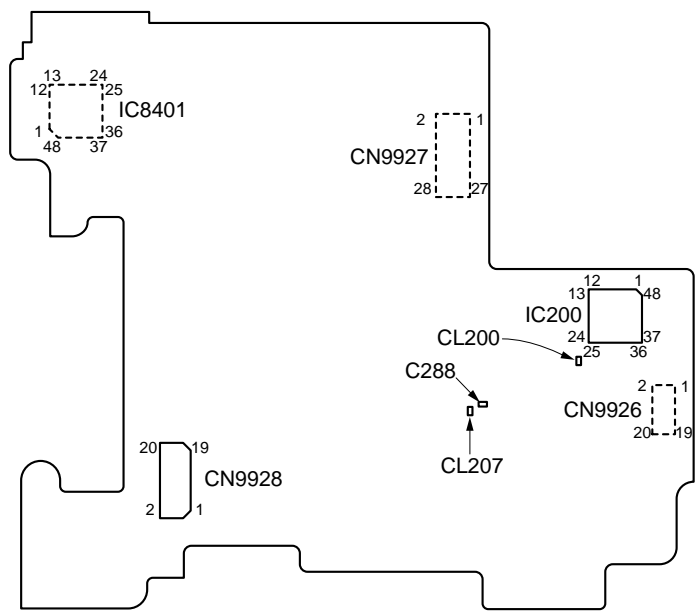
Mode	Camera recording and playback
Signal	1kHz, -66dBs signal: MIC jack left (Connect the MIC jack right to GND)
Measurement Point	Audio right terminal of AUDIO VIDEO OUT jack
Measuring Instrument	Audio level meter
Specified Value	Below -45 dBs (IHF-A filter ON, 20kHz LPF ON)

Checking method:

- 1) Input the 400Hz, -66 dBs signal in the left terminal of the MIC jack only.
- 2) Record in the camera mode.
- 3) Playback the recorded section.
- 4) Check that the signal level of the audio right terminal is the specified value.

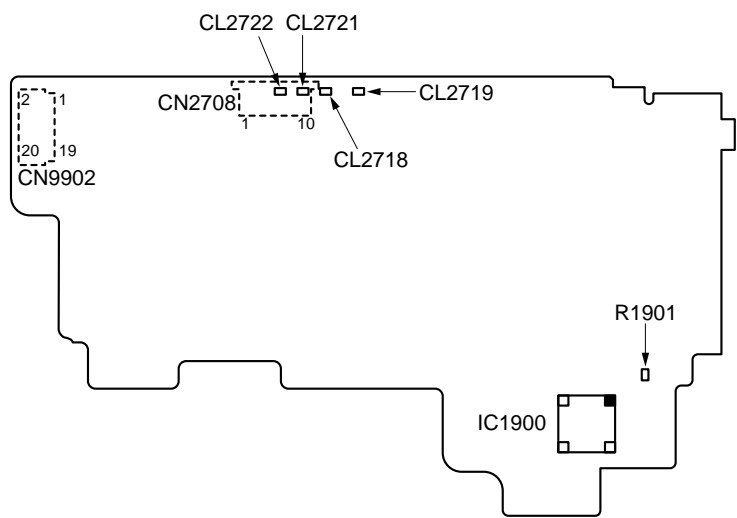
3-7. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

CB-58 BOARD (SIDE B)



NOTE: IC8401 is mounted to the SIDE A.

RJ-74 BOARD (SIDE B)



NOTE: CN2708 and CN9902 are mounted to the SIDE A.

5-4. SERVICE MODE

4-1. ADJUSTING REMOTE COMMANDER

The adjusting remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjusting remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Using the adjusting remote commander

- 1) Connect the adjusting remote commander to the LANC terminal.
- 2) Adjust the HOLD switch of the adjusting remote commander to “HOLD” (SERVICE position).

If it has been properly connected, the LCD on the adjusting remote commander will display as shown in Fig. 5-4-1.

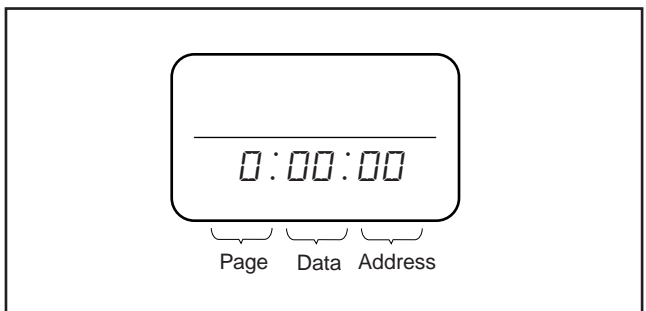


Fig. 5-4-1.

- 3) Operate the adjusting remote commander as follows.
 - Changing the page
The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH- button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LCD Display	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal notation conversion value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Table 5-4-1.

- Changing the address
The address increases when the FF (▶▶) button is pressed, and decreases when the REW (◀◀) button is pressed. There are altogether 256 addresses, from 00 to FF.
 - Changing the data (Data setting)
The data increases when the PLAY (▶) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
 - Writing the adjustment data
The PAUSE button must be pressed to write the adjustment data (C, D, F page) in the nonvolatile memory. (The new adjustment data will not be recorded in the nonvolatile memory if this step is not performed.)
- 4) After completing all adjustments, turn off the main power supply (8.4V) once.

2. Precautions upon using the adjusting remote commander

Mishandling of the adjusting remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

4-2. DATA PROCESSING

The calculation of the DDS display and the adjusting remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Table 5-4-2. indicates the hexadecimal notation-the decimal notation calculation table.

Hexadecimal notation-Decimal notation																② ↓	
The lower digits of the hexadecimal notation The upper digits of the hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A (<i>A</i>)	B (<i>b</i>)	C (<i>c</i>)	D (<i>d</i>)	E (<i>E</i>)	F (<i>F</i>)	
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	
A (<i>A</i>)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	
① → B (<i>b</i>)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	
C (<i>c</i>)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	
D (<i>d</i>)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	
E (<i>E</i>)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	
F (<i>F</i>)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	

Note: () indicate the adjusting commander display.

(Example) In the case that the DDS display and the adjusting commander display are BD (*bd*).

As the upper digit of the hexadecimal notation is B (*b*), and the lower digit is D (*d*), the intersection “189” of the ① and ② in the above table is the decimal notation to be calculated.

Table 5-4-2.

4-3. SERVICE MODE

1. Setting the Test Mode

Page D	Address 10
--------	------------

Data	Function
00	Normal
01	Forced camera power ON
02	Forced VTR power ON
03	Forced camera+VTR power ON

- For page D, the data set is recorded in the non-volatile memory by pressing the PAUSE button of the adjusting remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off (8.4 Vdc).
- After completing adjustments/repairs, be sure to return the data of this address to 00, and press the PAUSE button of the adjusting remote commander.
Set data: 00 to page: 0, address: 01.

2. Total Drum Rotation Time

Page 2	Address 35 to 37
--------	------------------

Address	Function	Remarks
35	Minute (decimal)	1 to 59 minutes
36	Hour (L) (decimal)	1 to 99 hours
37	Hour (H) (decimal)	100 to 9900 hours

Note: This data will be erased when the coin lithium battery (LI-1 board) is removed.

3. Emergence Memory Address

Page C	Address 30 to 3B
--------	------------------

Address	Contents
30	EMG code when first error occurs
32	Upper: MSW code when shift starts when first error occurs Lower: MSW code when first error occurs
33	Lower: MSW code to be moved when first error occurs
34	EMG code when second error occurs
36	Upper: MSW code when shift starts when second error occurs Lower: MSW code when second error occurs
37	Lower: MSW code to be moved when second error occurs
38	EMG code when last error occurs
3A	Upper: MSW code when shift starts when last error occurs Lower: MSW code when last error occurs
3B	Lower: MSW code to be moved when last error occurs

When no error occurs in the unit, data 00 is written in the above addresses (30 to 3B). When the first error occurs in the unit, the data corresponding to the error is written in the first emergency address (30 to 33). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (34 to 37).

Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (38 to 3B). Consequently, addresses 38 to 3B are updated each time errors occur.

Note 1: After completing adjustments, be sure to rewrite the data of addresses 30 to 3B to 00.

- Set data: 01 to page: 0, address: 01.
- Set data: 00 to page: C, address: 30, and press the PAUSE button of the adjusting remote commander.
- Set data: 00 to page: C, address: 31, and press the PAUSE button of the adjusting remote commander.
- Set data: 00 to page: C, address: 32, and press the PAUSE button of the adjusting remote commander.
- Set data: 00 to page: C, address: 33, and press the PAUSE button of the adjusting remote commander.
- Set data: 00 to page: C, address: 34, and press the PAUSE button of the adjusting remote commander.
- Set data: 00 to page: C, address: 35 and press the PAUSE button of the adjusting remote commander.
- Set data: 00 to page: C, address: 36 and press the PAUSE button of the adjusting remote commander.
- Set data: 00 to page: C, address: 37 and press the PAUSE button of the adjusting remote commander.
- Set data: 00 to page: C, address: 38, and press the PAUSE button of the adjusting remote commander.
- Set data: 00 to page: C, address: 39, and press the PAUSE button of the adjusting remote commander.
- Set data: 00 to page: C, address: 3A, and press the PAUSE button of the adjusting remote commander.
- Set data: 00 to page: C, address: 3B, and press the PAUSE button of the adjusting remote commander.
- Set data: 00 to page: 0, address: 01, and press the PAUSE button of the adjusting remote commander.

3-1. EMG Code (Emergency Code)

Codes corresponding to the errors which occur are written in addresses 30, 34, 38. The type of error indicated by the code are shown in the following table.

Code	Error Type
00	No error (Initial state)
10	Loading motor time-out during LOAD
11	Loading motor time-out during UNLOAD
22	T reel error
23	S reel error
30	Capstan FG error
40	FG error during drum start-up
42	FG error during normal drum rotation

3-2. MSW Codes

MSW when errors occur:

Information on MSW (mode SW) when errors occur

MSW when movement starts:

Information on MSW when movements starts when the mechanism position is moved (When the L motor is moved)

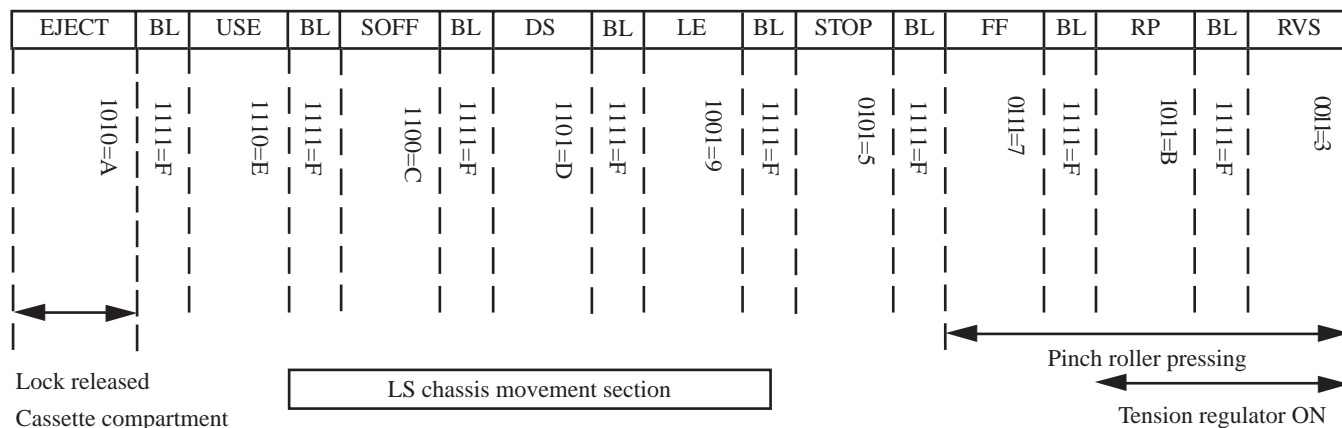
MSW of target of movement:

Information on target MSW of movement when the mechanism position is moved.

Mechanical Position

← UNLOAD

LOAD →



Position	Code	Contents
EJECT	A	Position at which the cassette compartment lock is released, and position at the farthest unload side mechanically at which the mechanism can move no further in the UNLOAD direction.
BL	F	BLANK code, at the boundary between codes. The mechanism will not stop at this code during operations. (Excluding LOAD/UNLOAD)
USE	E	EJECT completion position. When the cassette is ejected, the mechanism will stop at this position. Cassette IN standby. The guide will start protruding out as the mechanism moves towards the LOAD position.
SOFF	C	Code during loading. Code output while the LS chassis is moving.
DS	D	LS operations and guide loading are performed here.
LE	9	Current limiter is turned off.
STOP	5	Stop position in the loading state. The pinch roller separates, the tension regulator returns, and the brake is imposed on both reels.
FF	7	FF position. The tension regulator is half on. This position is not used except for the FF mode.
RP	B	PB, REC, Cue, Pause, FX2, FWD-SL positions. When the pinch roller is pressed, and the tension regulator is ON, the mechanism is operating at this position in modes in which normal images are shown.
RVS	3	Reverse running position. REW, REV, RX1, RX2, and RVS-SLOW are performed at this position.
NULL	0	Code not existing in the MD. When errors occur when the loading motor is not driving, this code is memorized.

SECTION 6

REPAIR PARTS LIST

6-1. EXPLODED VIEWS

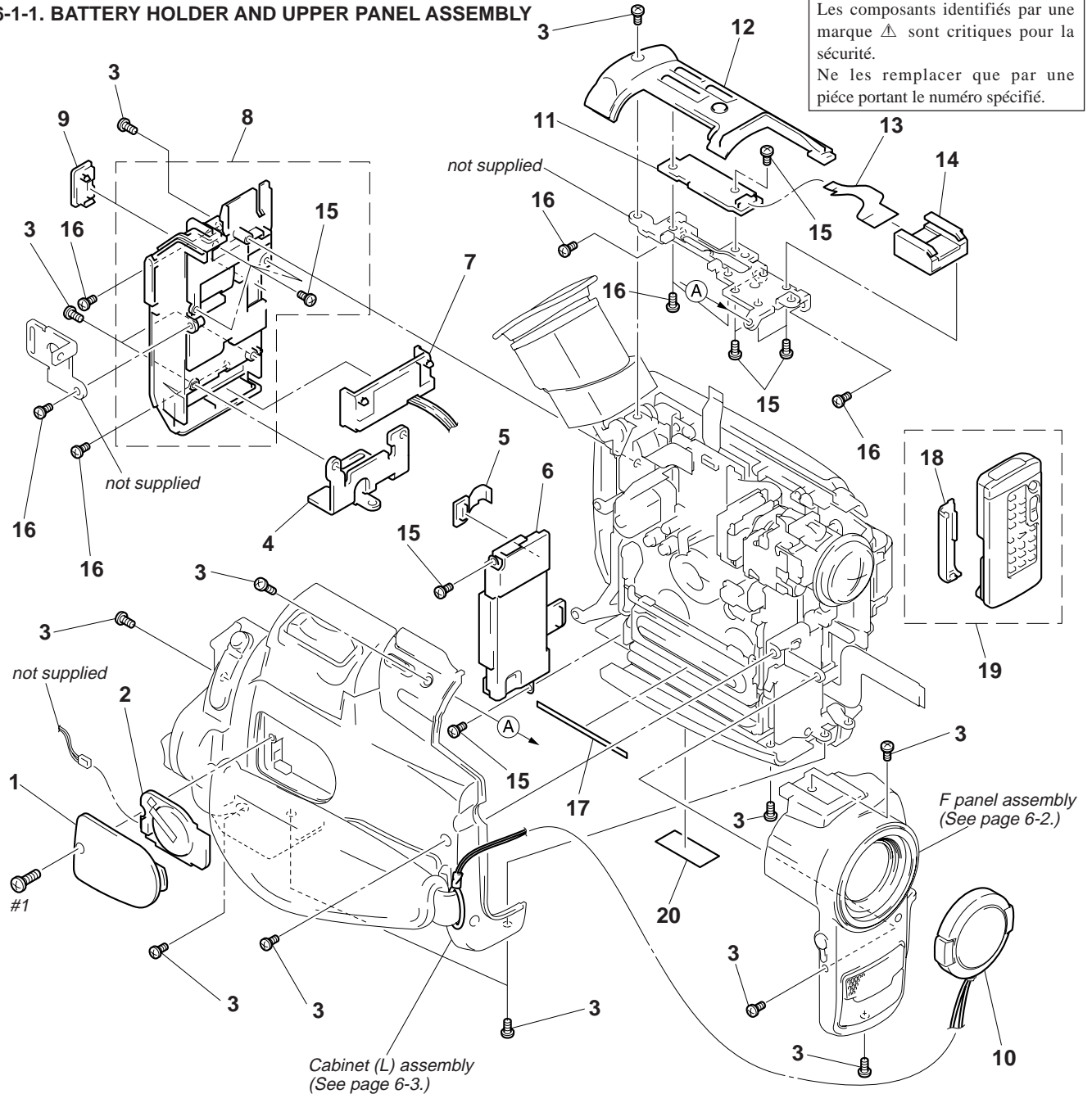
NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

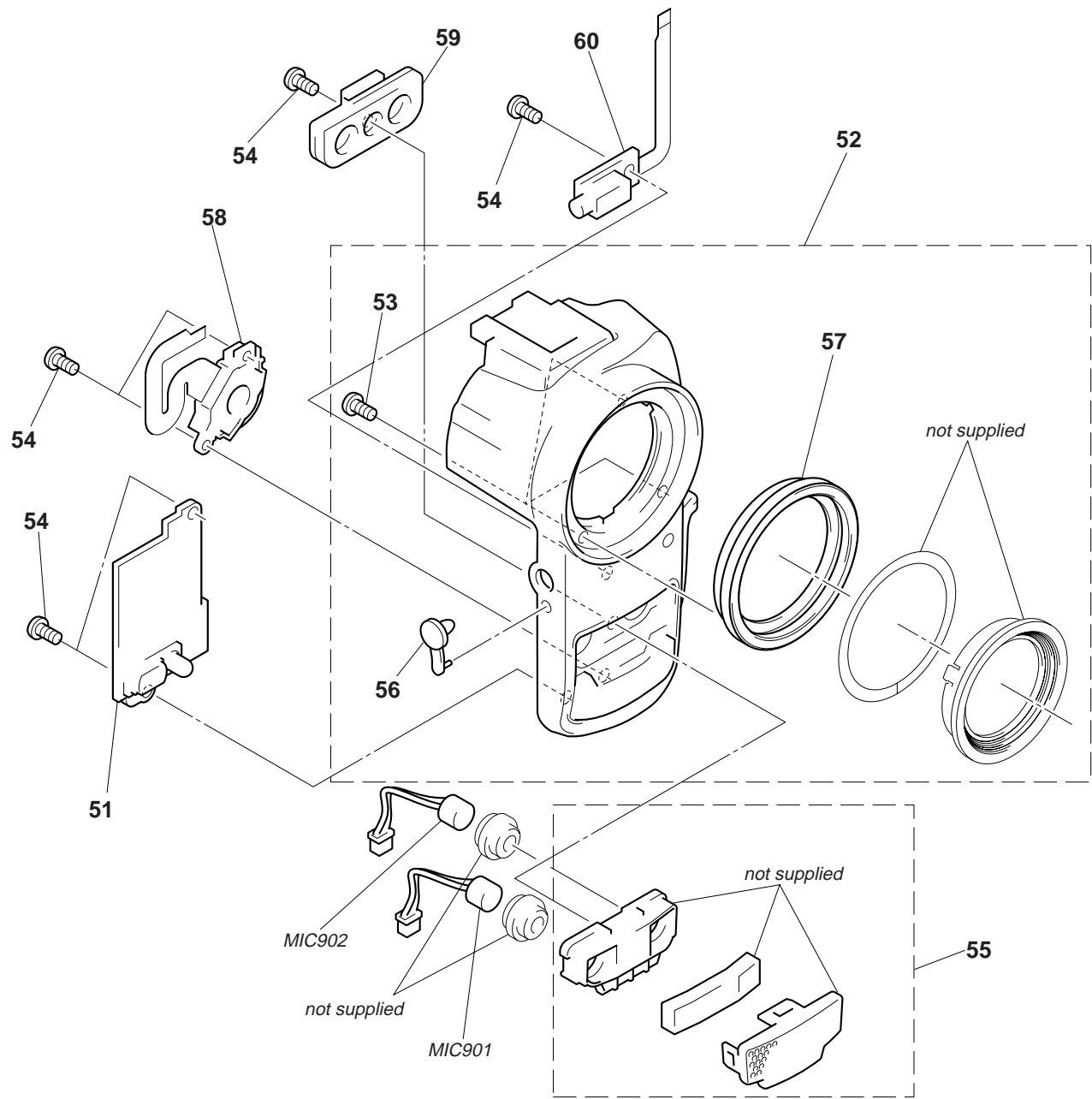
Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-1. BATTERY HOLDER AND UPPER PANEL ASSEMBLY



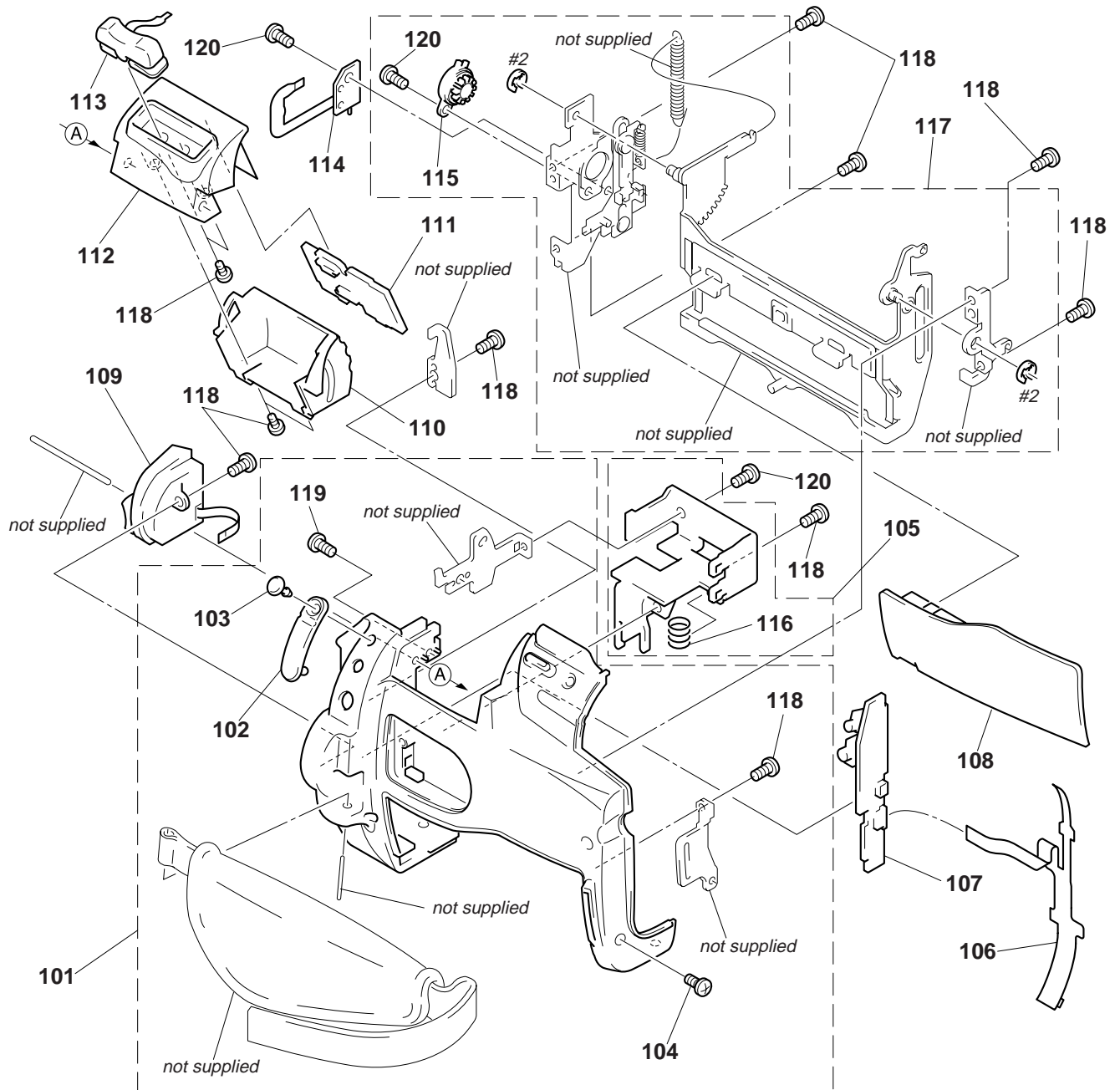
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-975-756-01	LID, BT		12	X-3947-391-1	PANEL ASSY, UPPER	
* 2	1-665-517-11	LI-1 BOARD		13	1-665-523-11	FP-558 FLEXIBLE BOARD	
3	3-968-729-01	SCREW (M2), LOCK ACE, P2		14	1-774-867-21	CONNECTOR,EXTERNAL(HOT SHOE)8P	
* 4	3-975-751-01	SHEET METAL (LOWER), STRAP		15	3-968-729-51	SCREW (M2), LOCK ACE, P2	
5	1-665-529-11	FP-542 FLEXIBLE BOARD		16	3-948-339-01	SCREW, TAPPING	
6	A-7066-967-A	DD-96 BOARD, COMPLETE (TRV7E)		* 17	3-976-709-01	LABEL, CASSETTE CAUTION	
6	A-7067-007-A	DD-96 BOARD, COMPLETE (TRV7)		18	3-792-854-21	LID, BATTERY CASE (for RMT-808/809)	
7	1-694-076-31	TERMINAL BOARD, BATTERY		19	1-475-141-21	COMMANDER, REMOTE (RMT-808)	(TRV7/TRV7E:E,Tourist)
8	X-3947-272-1	HOLDER ASSY, BATTERY					
9	3-975-752-01	LID (BT), CPC		19	1-475-141-31	COMMANDER, REMOTE (RMT-809)	(TRV7E:AEP,UK)
10	X-3947-285-1	CAP ASSY, LENS		* 20	3-704-367-01	LABEL (TRV7)	
11	A-7073-063-A	TS-1 BOARD, COMPLETE					

6-1-2. F PANEL ASSEMBLY



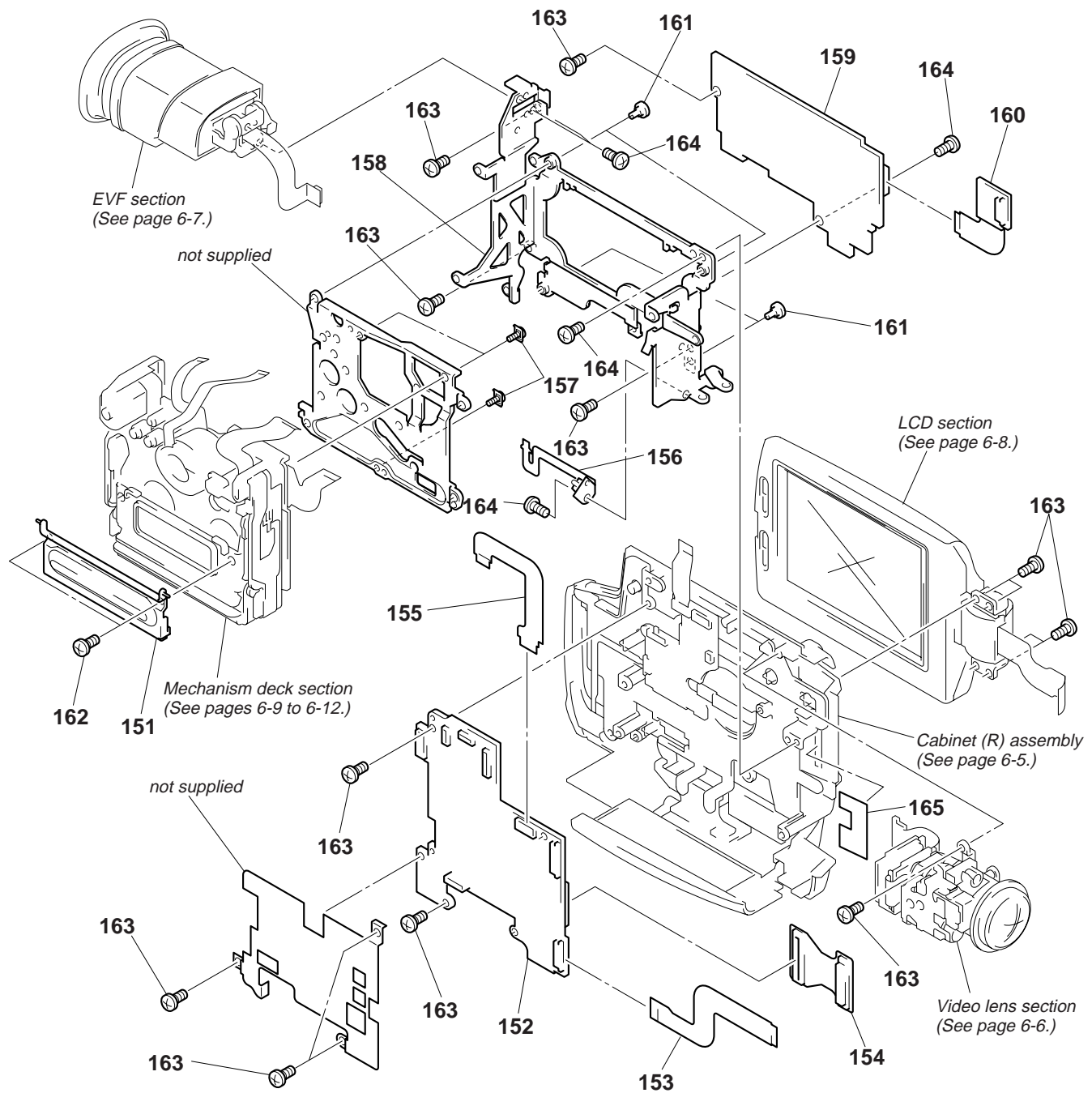
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	A-7073-067-A	MA-301 BOARD, COMPLETE		57	3-975-794-01	SCREW, FILTER	
52	X-3947-387-1	PANEL ASSY, F		58	1-475-122-11	SWITCH BLOCK, CONTROL(MF4810)	
53	3-968-729-51	SCREW (M2), LOCK ACE, P2		59	X-3947-494-1	COVER (REAR) ASSY, MICROPHONE	
54	3-719-408-11	SCREW (B2), TAPPING, P3		60	1-665-532-11	FP-547 FLEXIBLE BOARD	
55	X-3947-483-1	HOLDER ASSY, MICROPHONE					
56	3-975-800-01	COVER (F), JACK		MIC901	1-542-325-11	MICROPHONE	
				MIC902	1-542-325-11	MICROPHONE	

6-1-3. CABINET (L) ASSEMBLY



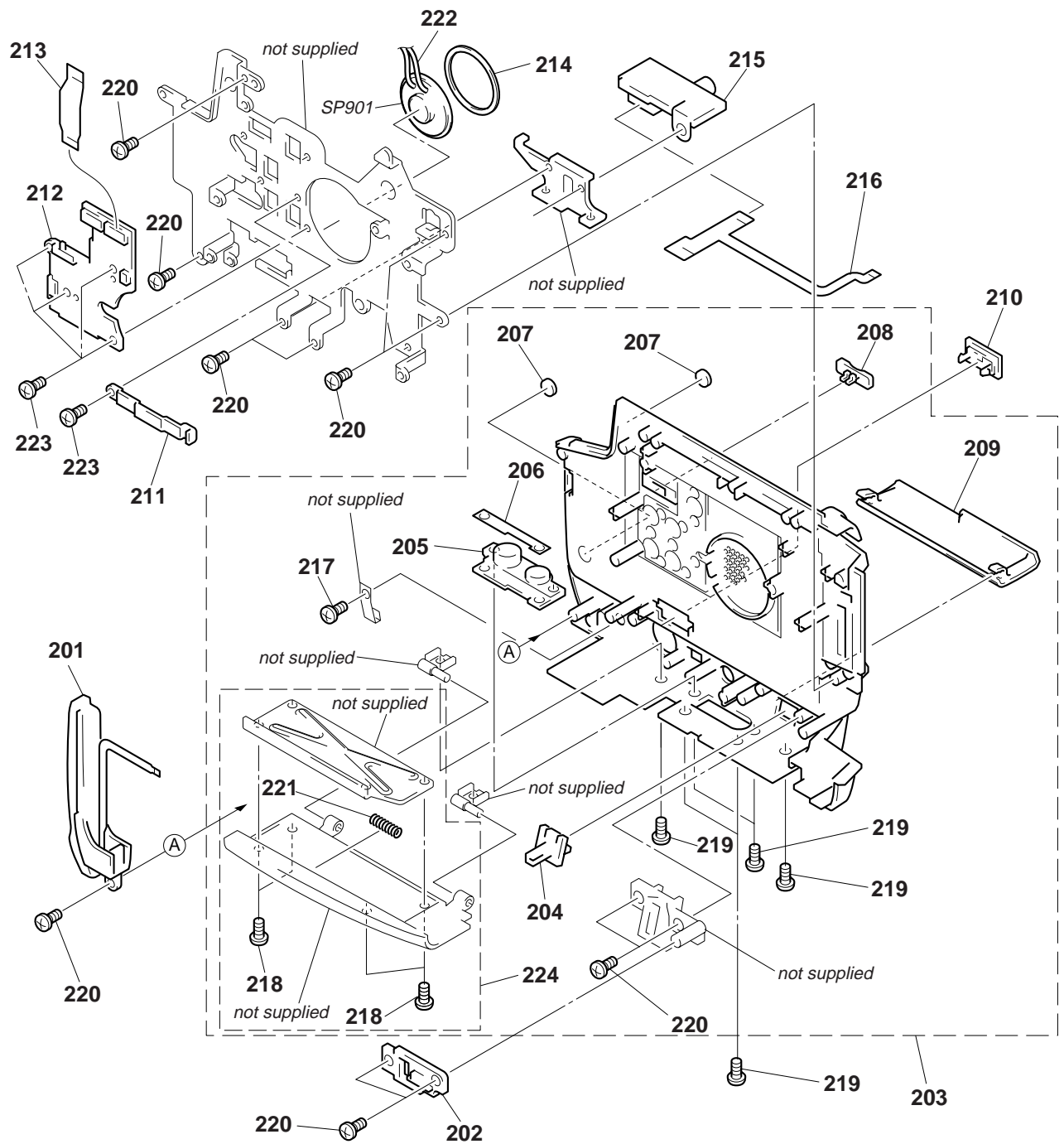
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	X-3947-386-1	CABINET (L) ASSY		110	X-3947-397-1	CABINET ASSY, VK LOWER (TRV7/TRV7E:E,Tourist)	
102	3-975-771-01	COVER (L), JACK		111	A-7073-066-A	VK-42 BOARD, COMPLETE (TRV7/TRV7E:E,Tourist)	
103	3-969-505-01	PIN, JC		111	A-7073-204-A	VK-42P BOARD, COMPLETE (TRV7E:AEP,UK)	
104	3-968-729-01	SCREW (M2), LOCK ACE, P2		112	X-3947-277-1	CABINET ASSY, VK UPPER	
105	X-3947-436-1	COVER ASSY, CL		113	1-475-120-11	SWITCH BLOCK, CONTROL(ZK4810)	
106	1-665-531-11	FP-544 FLEXIBLE BOARD		114	1-665-527-11	FP-540 FLEXIBLE BOARD	
107	A-7073-064-A	HL-8 BOARD, COMPLETE		115	4-634-290-11	DAMPER	
108	X-3947-393-1	LID ASSY, CASSETTE		116	3-975-774-01	SPRING, COMPRESSION	
109	1-475-121-21	SWITCH BLOCK, CONTROL(PS4810E) (TRV7E:AEP,UK)		117	X-3947-264-1	CS ASSY	
109	1-475-121-31	SWITCH BLOCK, CONTROL(PS4810U) (TRV7/TRV7E:E,Tourist)		118	3-948-339-01	SCREW, TAPPING	
110	X-3947-392-1	CABINET ASSY, VK LOWER (TRV7E:AEP,UK)		119	3-713-786-21	SCREW (M2X3)	
				120	3-968-729-51	SCREW (M2), LOCK ACE, P2	

6-1-4. MD FRAME AREA SECTION



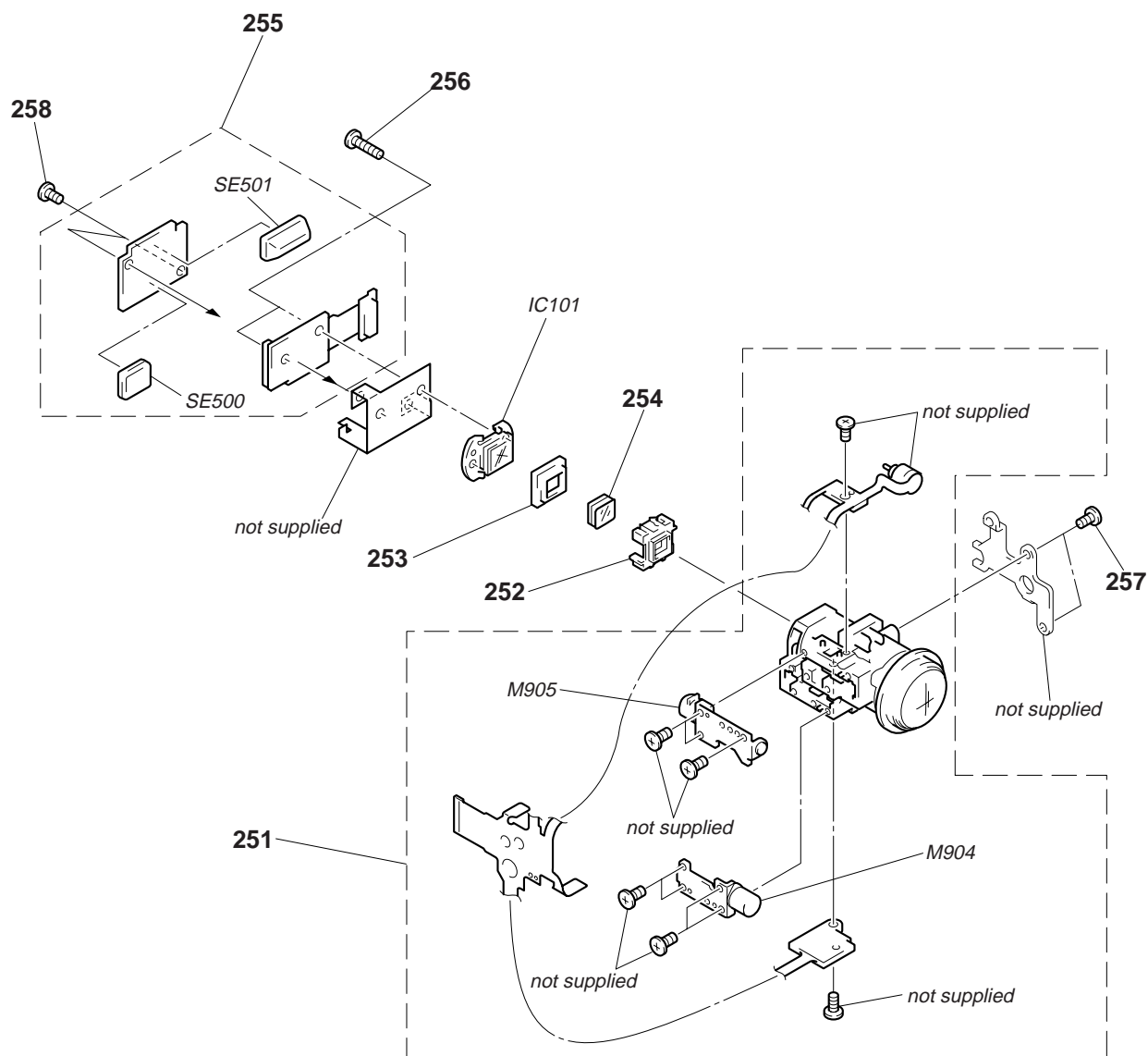
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	X-3947-265-1	SHEET METAL ASSY, CASSETTE		159	A-7066-966-A	RJ-74 BOARD, COMPLETE	
152	A-7066-990-A	CB-58P BOARD, COMPLETE (TRV7E)		160	1-665-526-11	FP-538 FLEXIBLE BOARD	
152	A-7067-004-A	CB-58 BOARD, COMPLETE (TRV7)		161	3-352-483-01	SCREW (M2), STEP	
153	1-665-520-11	FP-535 FLEXIBLE BOARD		162	3-728-103-11	SCREW (M1.4X1.6)	
154	1-665-530-11	FP-543 FLEXIBLE BOARD		163	3-948-339-01	SCREW, TAPPING	
155	1-665-519-11	FP-534 FLEXIBLE BOARD		164	3-968-729-51	SCREW (M2), LOCK ACE, P2	
156	1-665-525-11	FP-537 FLEXIBLE BOARD		165	3-975-765-01	SHEET, PANEL FLEXIBLE	
157	X-3945-526-1	SCREW ASSY, STEP					
* 158	X-3947-267-1	FRAME ASSY, SUB					

6-1-5. CABINET (R) ASSEMBLY



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	1-475-123-21	SWITCH BLOCK, CONTROL(CK4810E)		213	1-665-522-11	FP-546 FLEXIBLE BOARD	
202	A-7073-062-A	FC-62 BOARD, COMPLETE		214	3-965-367-01	SPACER, SP	
203	X-3947-390-1	CABINET (R) ASSY (TRV7E:AEP,UK)		215	A-7073-061-A	JK-156 BOARD, COMPLETE	
203	X-3947-395-1	CABINET (R) ASSY (TRV7)		216	1-665-521-11	FP-545 FLEXIBLE BOARD	
203	X-3947-467-1	CABINET (R) ASSY (TRV7E:E,Tourist)		217	3-713-791-51	SCREW (M1.7X3.5), TAPPING, P2	
204	3-975-737-01	KNOB, F SELECTION		218	3-968-729-21	SCREW (M2), LOCK ACE, P2	
205	3-975-739-01	TRIPOD (LARGE)		219	3-968-729-01	SCREW (M2), LOCK ACE, P2	
206	3-975-749-01	INSULATOR, TRIPOD		220	3-948-339-01	SCREW, TAPPING	
207	3-959-978-02	CUSHION, PANEL		221	3-562-309-00	SPRING, COMPRESSION	
208	3-975-740-01	KNOB, SS SELECTION		* 222	1-957-220-11	HARNESS (IS-56)	
209	3-975-742-01	LID, TERMINAL		223	3-968-729-51	SCREW (M2), LOCK ACE, P2	
210	3-975-753-02	LID (R), CPC		224	X-3947-742-1	COVER (BOTTOM) ASSY	
* 211	X-3947-645-1	PLATE ASSY, SP FIXED		SP901	1-505-425-11	SPEAKER (2.8CM)	
212	A-7073-060-A	IK-1 BOARD, COMPLETE					

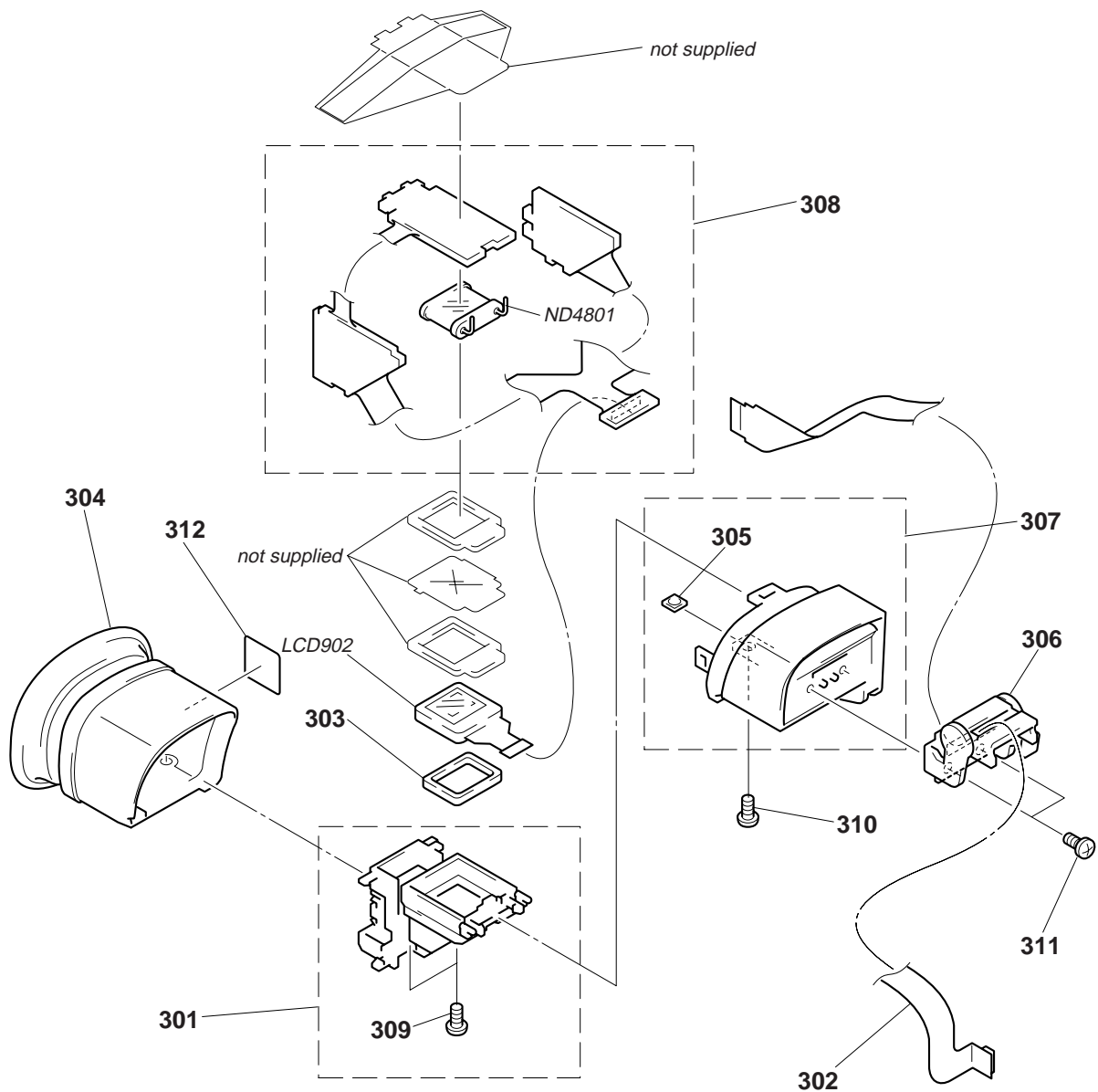
6-1-6. VIDEO LENS (VCL-4010VB)







Be sure to read "Note on the CCD Imager replacement" on page 4-9 when changing the CCD imager.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
251	1-758-011-11	LENS, VIDEO (VCL-4010VB)		IC101	A-7030-755-A	CCD BLOCK ASSY (080 SERVICE) (CCD IMAGER)(TRV7)	
252	3-969-297-01	ADAPTOR (CH), CCD FITTING		IC101	A-7030-765-A	CCD BLOCK ASSY (081 SERVICE) (CCD IMAGER)(TRV7E)	
253	3-957-980-11	RUBBER (C), SEAL					
254	1-547-923-21	FILTER BLOCK, OPTICAL					
255	A-7073-059-A	CD-168 BOARD, COMPLETE					
256	3-947-268-11	TITE (2), +B TAPPING (P)		M904	3-709-279-01	MOTOR, FOCUS	
257	3-948-339-01	SCREW, TAPPING		M905	3-709-278-01	MOTOR, ZOOM	
258	3-968-729-51	SCREW (M2), LOCK ACE, P2		SE500	1-801-731-31	SENSOR, ANGULAR VELOCITY (43kHz)(YAW)	
				SE501	1-810-725-71	SENSOR, ANGULAR VELOCITY (PITCH)	

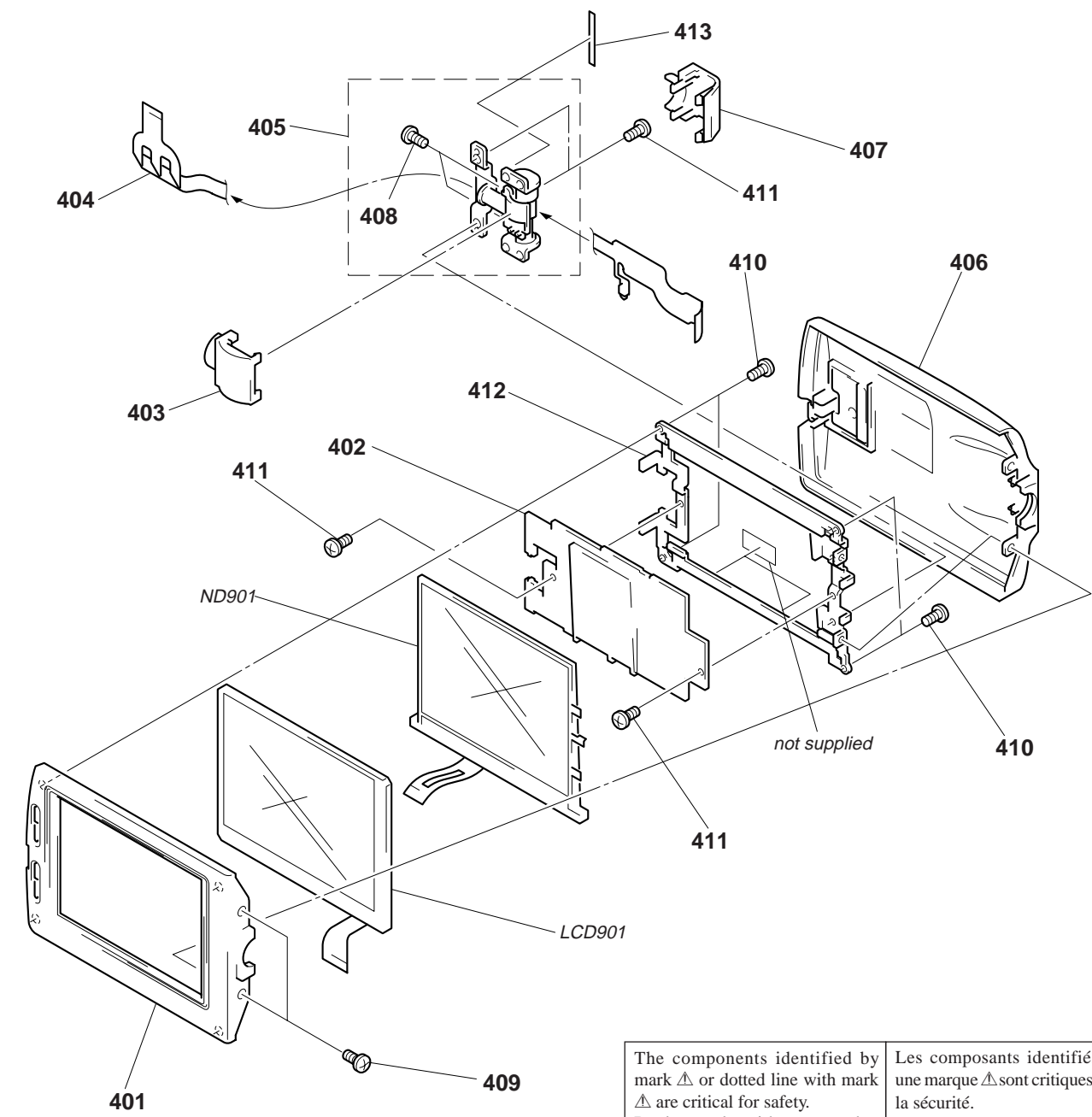
6-1-7. EVF BLOCK ASSEMBLY






The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
301	X-3946-494-1	HOLDER ASSY, LENS		308	A-7073-068-A	VF-115 BOARD, COMPLETE	
302	1-665-524-11	FP-536 FLEXIBLE BOARD		309	3-719-401-11	SCREW (B1.7), TAPPING	
* 303	3-960-302-11	CUSHION (1), LCD		310	3-968-729-01	SCREW (M2), LOCK ACE, P2	
304	X-3947-275-1	CABINET (REAR) ASSY, EVF		311	3-948-339-01	SCREW, TAPPING	
305	3-718-233-01	NUT, PLATE		312	3-964-007-01	LABEL (P), CVF (TRV7E)	
306	X-3947-276-1	HINGE ASSY, EVF		LCD902	8-753-016-10	LCX005BK-4	
307	X-3947-274-1	CABINET (FRONT) ASSY, EVF		 ND4801	1-517-414-31	FLUORESCENT TUBE (0.55 INCH)	

6-1-8. LCD BLOCK ASSEMBLY

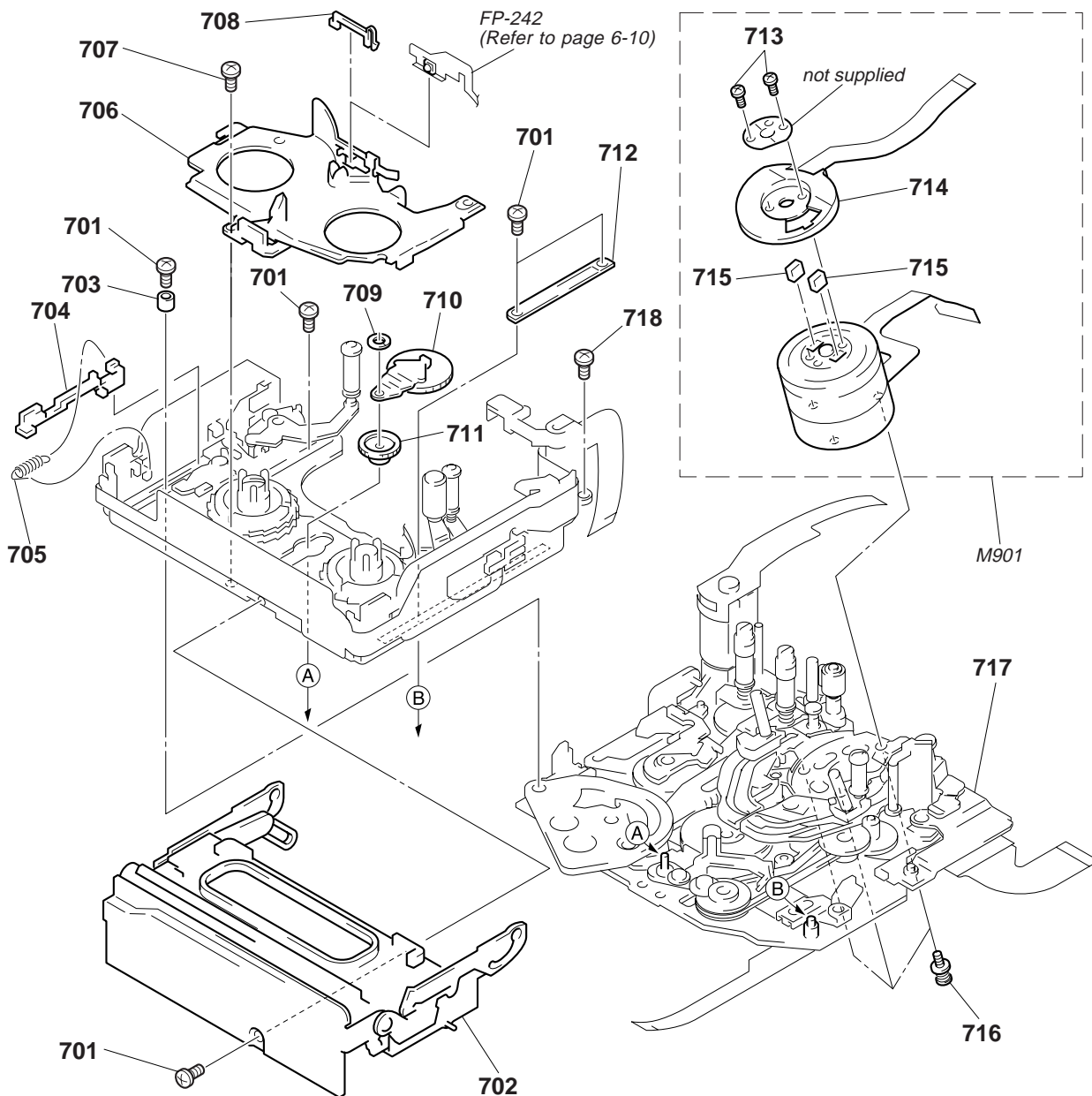


The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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Ref. No.	Part No.	Description	Remark
401	X-3947-389-1	CABINET (M) ASSY, P	
402	A-7066-968-A	PD-85 BOARD, COMPLETE (TRV7)	
402	A-7066-992-A	PD-85P BOARD, COMPLETE (TRV7E)	
403	3-975-764-01	COVER (REAR), HINGE	
404	1-665-528-11	FP-541 FLEXIBLE BOARD	
405	X-3947-271-1	HINGE ASSY	
406	X-3947-388-1	CABINET (C) ASSY, P (TRV7E:AE,UK)	
406	X-3947-394-1	CABINET (C) ASSY, P (TRV7)	
406	X-3947-402-1	CABINET (C) ASSY, P (TRV7E:E,Tourist)	
407	3-975-763-01	COVER (FRONT), HINGE	

Ref. No.	Part No.	Description	Remark
408	3-968-729-21	SCREW (M2), LOCK ACE, P2	
409	3-968-729-01	SCREW (M2), LOCK ACE, P2	
410	3-948-339-01	SCREW, TAPPING	
411	3-968-729-51	SCREW (M2), LOCK ACE, P2	
* 412	X-3947-458-1	FRAME ASSY, PANEL	
413	3-831-441-11	RETAINER, HINGE FLEXIBLE	
LCD901	1-801-664-21	INDICATOR MODULE, LIQUID CRYSTAL	
 ND901	1-517-656-21	TUBE, FLUORESCENT COLD CATHODE	

6-1-9. CASSETTE COMPARTMENT AND DRUM ASSEMBLY



REF. No.	Part No.	Description	Remark	REF. No.	Part No.	Description	Remark
701	3-728-103-11	SCREW (M1.4X1.6), SPECIAL HEAD		711	3-748-736-01	GEAR, RELAY	
702	X-3748-610-2	COMPARTMENT ASSY, CASSETTE		712	3-748-702-02	SLIDER, CAM	
703	3-748-703-01	COLLAR		713	3-703-816-74	SCREW (M1.4X4.5), SPECIAL HEAD	
704	3-748-700-02	SLIDER, LOCK		714	X-3944-897-2	FPC ASSY, MOTOR	
705	3-748-701-01	SPRING, TENSION		715	1-770-363-11	ELASTIC CONNECTOR	
706	X-3748-613-3	BASE ASSY, LED		716	A-7026-009-B	SCREW ASSY, DRUM FITTING	
707	3-704-197-21	SCREW (M1.4x2.5), LOCKING		717	A-7026-022-A	CHASSIS BLOCK ASSY, MECHANICAL	
708	3-748-683-01	HOLDER, LED		718	3-703-816-42	SCREW (M1.4x2.5), SPECIAL HEAD	
709	3-315-414-31	WASHER		M901	A-7044-007-A	DRUM ASSY (DEH-07A-R)	
710	X-3748-609-2	GOOSENECK ASSY					

6-1-10. LS CHASSIS BLOCK ASSEMBLY

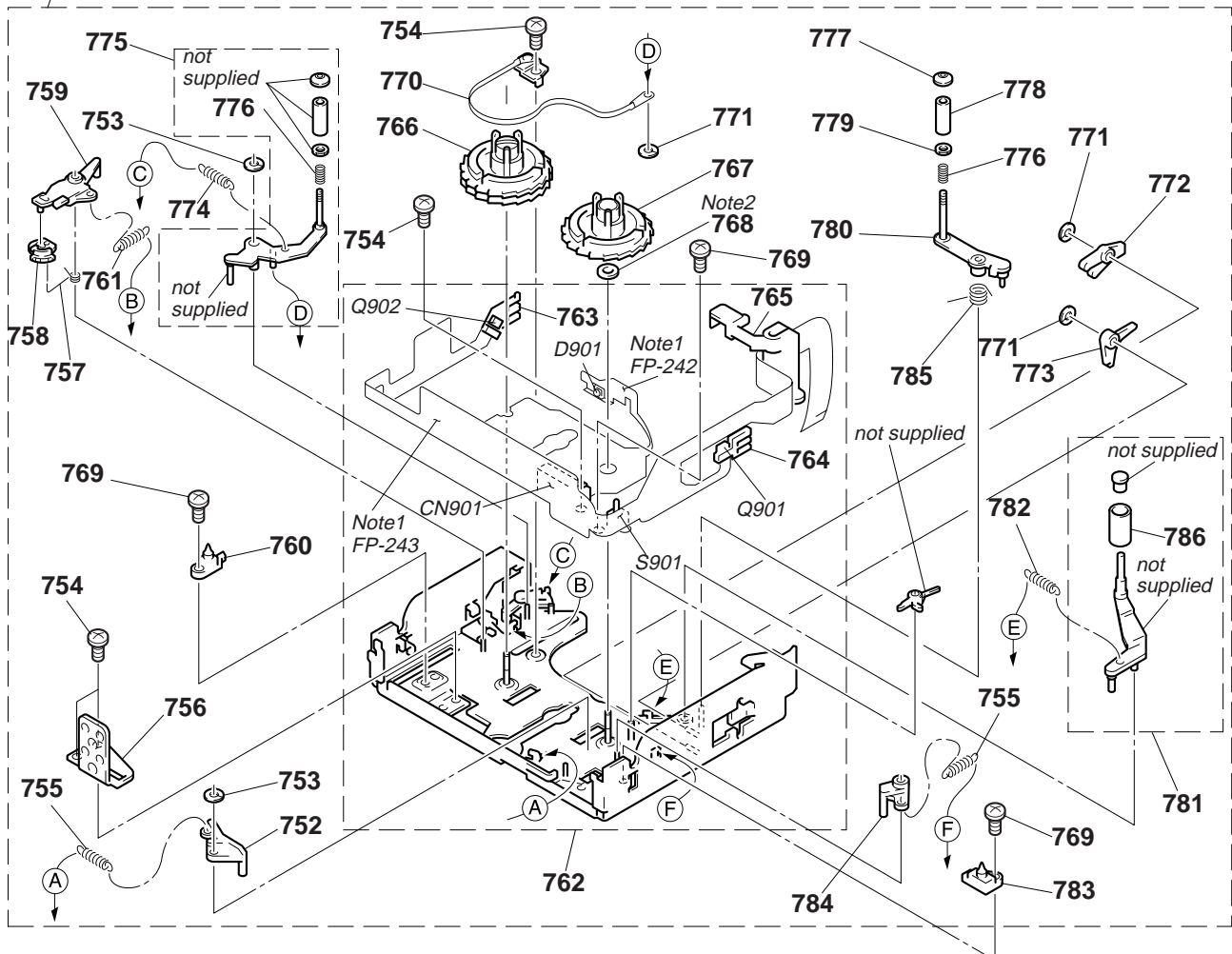
Note 1 : About FP-242 and FP-243

The FP-242 and FP-243 flexible boards are installed to a chassis with a hot press, which are included in the Ref. No. 762 LS chassis (S) assembly, They are not supplied separately because the high precision for installation is needed.

Note 2 : Selecting the T washer

Select proper parts for the Ref. No. 768 T washer according to "Height adjustment for T reel table assembly" on page 23 in the "DV MECHANICAL ADJUSTMENT MANUAL I" (9-973-815-11).

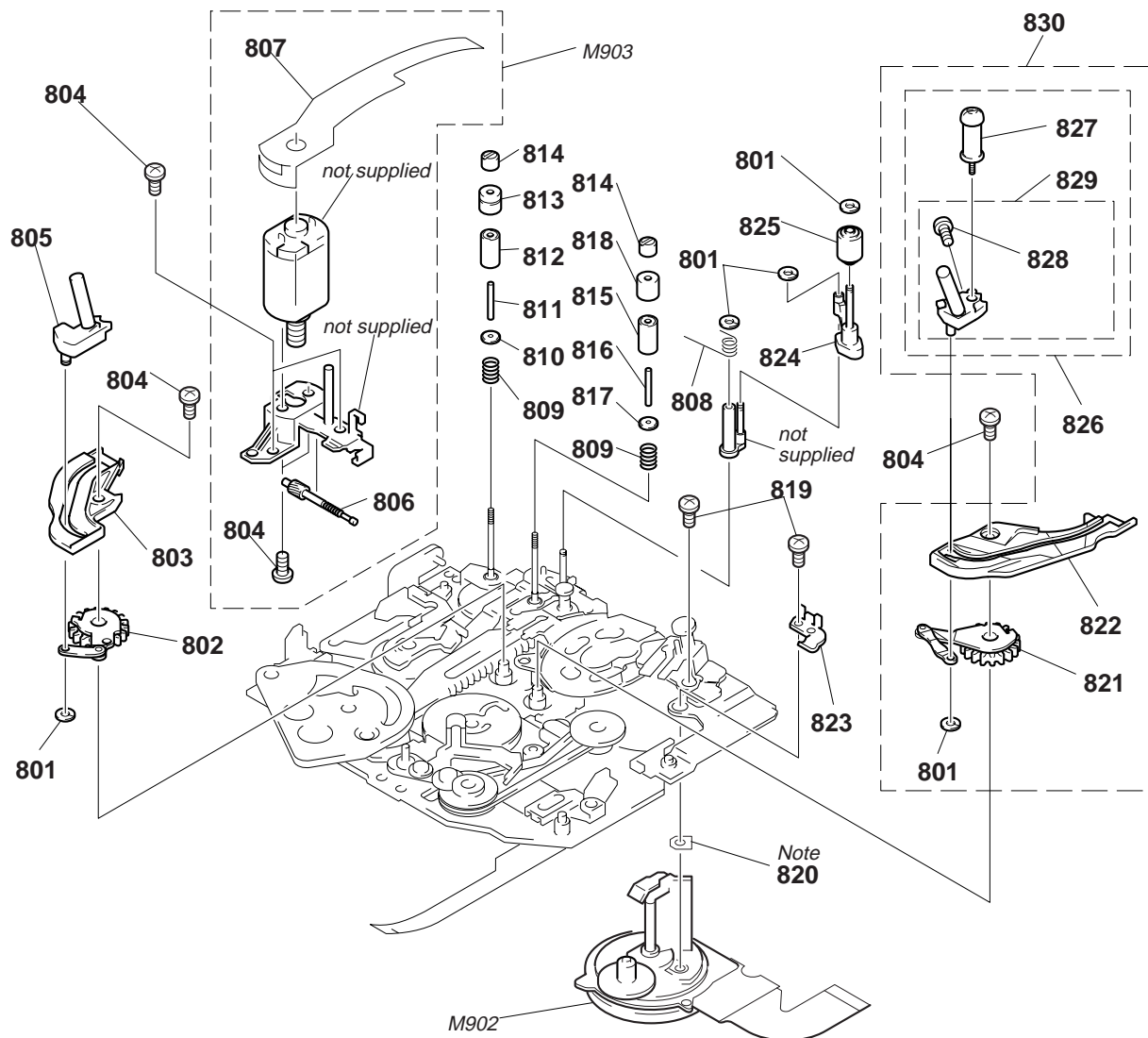
751 (Including Ref No.706 and 707 on page 6-9.)



REF. No.	Part No.	Description	Remark	REF. No.	Part No.	Description	Remark
751	A-7025-008-A	CHASSIS BLOCK ASSY, LS		770	X-3748-618-2	BAND ASSY, TENSION REGULATOR	
752	3-748-775-02	BRAKE, RVS		771	3-315-384-11	WASHER, STOPPER	
753	3-315-414-31	WASHER		772	3-748-680-01	FOLLOWER, SLIDER	
754	3-728-103-11	SCREW (M1.4X1.6), SPECIAL HEAD		773	3-748-679-01	LEVER, LOCK	
755	3-748-776-01	SPRING, TENSION		774	3-748-822-02	SPRING, EXTENSION	
756	3-748-681-01	PLATE, LS CAM		775	A-7026-020-B	ARM BLOCK ASSY, TENSION REGULATOR	
757	3-748-774-01	SPRING, TORSION		776	3-940-891-01	SPRING, COMPRESSION	
758	3-748-773-04	HARD, S		777	3-966-194-01	FLANGE, TG7 UPPER	
759	3-748-815-02	ARM, S BRAKE		778	3-748-777-02	TG7	
760	3-748-677-01	POSITIONING, S		779	3-964-614-01	FLANGE, TG7 LOWER	
761	3-968-656-01	SPRING, TENSION		780	X-3748-616-2	ARM ASSY, TG7	
762	A-7026-021-A	CHASSIS (S) ASSY, LS		781	X-3748-630-2	ARM ASSY, PINCH	
763	3-748-761-01	HOLDER (S), SENSOR		782	3-748-603-01	SPRING, TENSION	
764	3-748-762-01	HOLDER (T), SENSOR		783	3-748-678-01	POSITIONING, T	
765	3-748-763-01	HOLDER, FPC		784	3-748-778-02	BRAKE, T HARD	
766	X-3748-614-2	TABLE ASSY, REEL, S		785	3-748-675-01	SPRING, TORSION	
767	X-3748-615-2	TABLE ASSY, REEL, T		786	X-3946-959-1	ROLLER ASSY (DIA. 5.6), PINCH	
768	3-748-682-01	WASHER, T (t:0.25, Green)	Note 2	CN901	1-770-312-11	CONNECTOR 4P	
768	3-748-682-11	WASHER, T (t:0.1, Yellow)		D901	8-719-050-98	DIODE LN57.S0	
768	3-748-682-21	WASHER, T (t:0.35, Black)		Q901	8-729-028-71	TRANSISTOR PN166.S0 (TAPE TOP)	
769	3-703-816-42	SCREW (M1.4x2.5), SPECIAL HEAD		Q902	8-729-028-71	TRANSISTOR PN166.S0 (TAPE END)	
				S901	1-762-351-11	SWITCH, PUSH (1 KEY)(REC PROOF)	

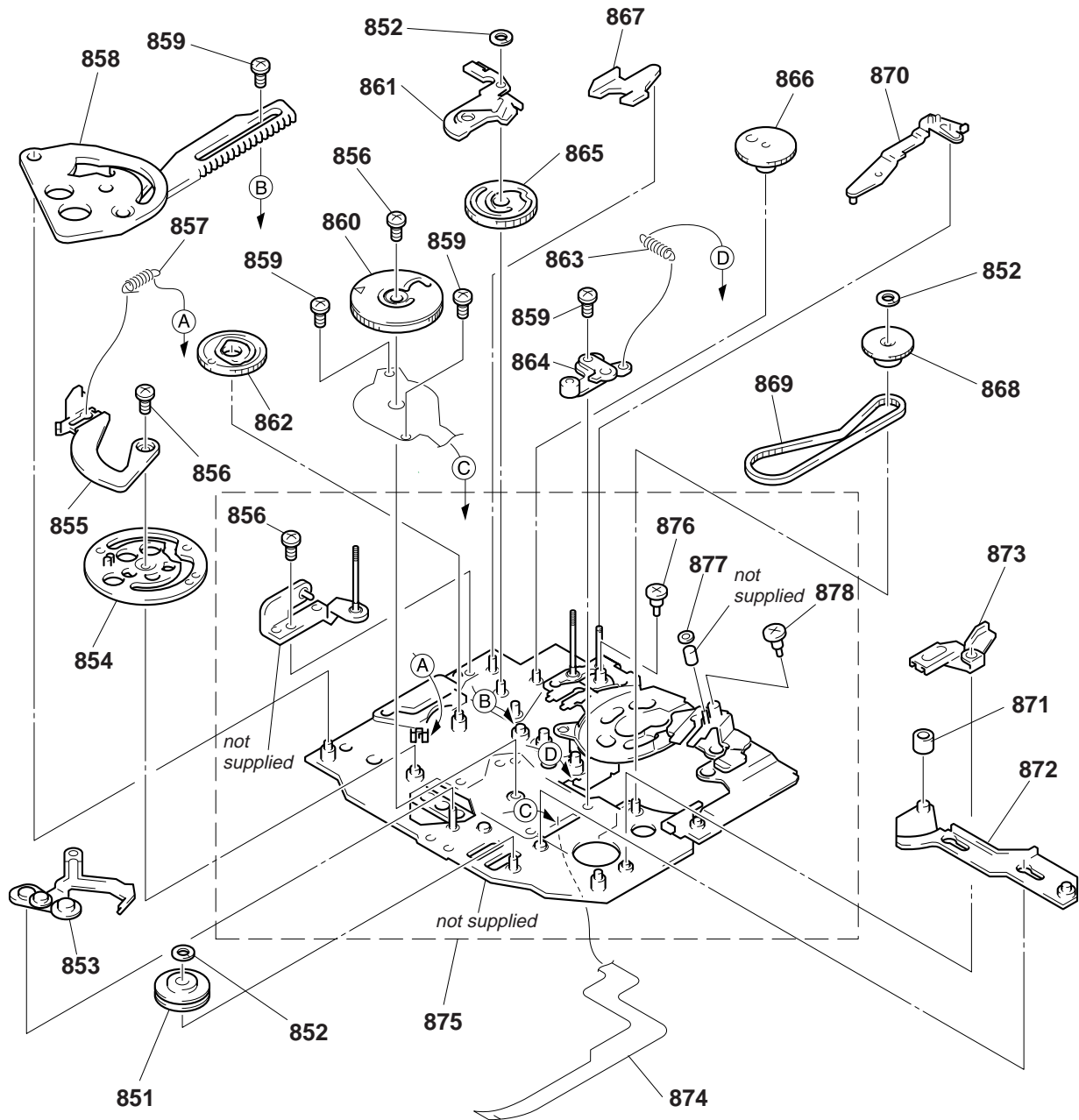
6-1-11. MECHANISM CHASSIS ASSEMBLY (1)

Note: Be sure to remember the installed position (one of two positions), direction and thickness of the Ref. No. 820 (head spacer) when the M902 (capstan motor) is removed. Refer to "3-9. Capstan motor" on page 15 in the DV MECHANICAL ADJUSTMENT MANUAL I (9-973-815-11) for details. The thickness of head spacer is normally 100 µm. If it is lost, two 50 µm head spacers will be needed. Be careful not to lose it.



REF. No.	Part No.	Description	Remark	REF. No.	Part No.	Description	Remark
801	3-315-414-31	WASHER		818	3-973-948-01	FLANGE (2), TG1/3 UPPER	
802	X-3748-623-1	GL (S) ASSY		819	3-728-103-11	SCREW (M1.4X1.6), SPECIAL HEAD	
803	3-748-600-02	RAIL (S)		820	3-727-843-16	SPACER, HEAD (CORRECTIVE SPACER)	(t=50µm)
804	3-703-816-42	SCREW (M1.4x2.5), SPECIAL HEAD					
805	X-3748-622-2	COASTER (S) ASSY					
806	X-3945-435-1	SHAFT (12) ASSY, WORM		821	X-3748-624-1	GL (T) ASSY	
807	1-657-756-11	FP-347 FLEXIBLE BOARD		822	3-748-601-02	RAIL (T)	
808	3-748-742-02	SPRING, TORSION		823	3-964-430-01	SPRING, LS RETAINER	
809	3-966-107-01	SPRING, COMPRESSION		824	X-3748-628-2	SLIDE ASSY, HC	
810	3-966-105-01	FLANGE, TG1 LOWER		825	A-7026-006-A	ROLLER ASSY, HC	
811	3-966-100-01	SLEEVE, TG1/3		826	A-7025-009-A	COASTER (T) BLOCK ASSY (-M)	
812	3-966-099-01	ROLLER, TG1/3		827	X-3748-626-3	TG5 ASSY	
813	3-966-102-01	FLANGE, TG1/3 UPPER		828	3-965-211-01	SCREW (M1)	
814	3-966-101-01	NUT, TG1/3		829	X-3946-602-1	COASTER (T) ASSY (-M)	
815	3-966-099-11	ROLLER, TG1/3		830	A-7026-002-A	GL (T) BLOCK ASSY	
816	3-966-100-11	SLEEVE, TG1/3					
817	3-966-106-01	FLANGE, TG3 LOWER		M902	8-835-524-01	MOTOR, DC SCD-0101A (CAPSTAN)	
				M903	A-7026-007-A	MOTOR ASSY, LM (LOADING)	

6-1-12. MECHANISM CHASSIS ASSEMBLY (2)



REF. No.	Part No.	Description	Remark	REF. No.	Part No.	Description	Remark
851	X-3945-640-1	PULLEY ASSY, RELAY		866	3-748-741-03	GEAR, No.1	
852	3-315-414-31	WASHER		867	3-748-731-02	ARM, POSITION	
853	X-3748-600-1	ARM ASSY, COMPULSION		868	X-3945-639-1	PULLEY ASSY, CONVERSION	
854	X-3748-605-1	CAM (S) ASSY		869	3-748-734-01	BELT, RELAY	
855	3-748-743-02	ARM, EJ		870	3-974-501-01	RVS STOPPER ARM (2)	
856	3-703-816-42	SCREW (M1.4x2.5), SPECIAL HEAD		871	3-728-109-01	ROLLER, LS	
857	3-748-744-01	SPRING, TENSION		872	3-748-647-01	SLIDER, MODE	
858	X-3748-602-2	ARM ASSY, LS		873	3-748-733-01	ARM, PINCH RELEASE	
859	3-728-103-11	SCREW (M1.4x1.6), SPECIAL HEAD		874	1-656-250-12	FP-245 FLEXIBLE BOARD	
860	X-3748-604-1	CAM ASSY, MODE		875	A-7026-023-B	CHASSIS SUB BLOCK ASSY	
861	3-748-739-02	RETAINER, GEAR		876	3-748-620-02	SCREW, ADJUSTMENT	
862	3-748-740-03	GEAR, No.3		877	4-943-288-01	WASHER	
863	3-748-602-02	SPRING, TENSION		878	3-748-605-02	SCREW, ADJUSTMENT	
864	X-3748-627-1	ARM ASSY, ADJUSTMENT					
865	3-748-738-02	GEAR, No.2					

6-2. ELECTRICAL PARTS LIST

Note:

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F : nonflammable

- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,
uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
uF : μ F
- COILS
uH : μ H

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
	A-7066-990-A	CB-58P BOARD, COMPLETE (TRV7E) *****				C312	1-164-858-11	CERAMIC CHIP 22PF 5%		16V	
	A-7067-004-A	CB-58 BOARD, COMPLETE (TRV7) ***** (Ref. No. 10,000 Series)				C313	1-164-858-11	CERAMIC CHIP 22PF 5%		16V	
		< CAPACITOR >				C314	1-104-847-11	TANTAL. CHIP 22uF 20%		4V	
C208	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V				C400	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
C209	1-107-820-11	CERAMIC CHIP 0.1uF 16V				C401	1-109-982-11	CERAMIC CHIP 1uF 10%		10V	
C212	1-164-850-11	CERAMIC CHIP 10PF 0.5PF 16V				C402	1-107-826-11	CERAMIC CHIP 0.1uF 10%		16V	
C215	1-164-937-11	CERAMIC CHIP 0.001uF 10% 16V				C403	1-164-940-11	CERAMIC CHIP 0.0033uF 10%		16V	
C216	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V				C404	1-164-677-11	CERAMIC CHIP 0.033uF 10%		16V	
C222	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V				C405	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
C223	1-107-820-11	CERAMIC CHIP 0.1uF 16V				C406	1-107-819-11	CERAMIC CHIP 0.022uF 10%		16V	
C229	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V				C408	1-164-937-11	CERAMIC CHIP 0.001uF 10%		16V	
C230	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V				C409	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
C231	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V				C410	1-107-826-11	CERAMIC CHIP 0.1uF 10%		16V	
C233	1-164-935-11	CERAMIC CHIP 470PF 10% 16V				C411	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
C234	1-164-845-11	CERAMIC CHIP 5PF 0.25PF 16V				C412	1-135-259-11	TANTAL. CHIP 10uF 20%		6.3V	
C236	1-164-862-11	CERAMIC CHIP 33PF 5% 16V				C413	1-107-826-11	CERAMIC CHIP 0.1uF 10%		16V	
C237	1-164-935-11	CERAMIC CHIP 470PF 10% 16V				C414	1-104-752-11	TANTAL. CHIP 33uF 20%		6.3V	
C238	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V				C415	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
C241	1-104-847-11	TANTAL. CHIP 22uF 20% 4V				C416	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
C243	1-115-156-11	CERAMIC CHIP 1uF 10V				C417	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
C257	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V				C418	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
C267	1-164-156-11	CERAMIC CHIP 0.1uF 25V				C419	1-107-826-11	CERAMIC CHIP 0.1uF 10%		16V	
C268	1-107-820-11	CERAMIC CHIP 0.1uF 16V				C1001	1-164-947-11	CERAMIC CHIP 0.01uF 20%		6.3V	
C288	1-164-941-11	CERAMIC CHIP 0.0047uF 10% 16V				C1002	1-135-181-21	TANTALUM CHIP 4.7uF 20%		6.3V	
C293	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V				C1003	1-107-820-11	CERAMIC CHIP 0.1uF 16V			
C294	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V				C1004	1-107-820-11	CERAMIC CHIP 0.1uF 16V			
C295	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V				C1005	1-107-820-11	CERAMIC CHIP 0.1uF 16V			
C296	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V				C1006	1-107-820-11	CERAMIC CHIP 0.1uF 16V			
C297	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V				C1007	1-107-820-11	CERAMIC CHIP 0.1uF 16V			
C298	1-164-156-11	CERAMIC CHIP 0.1uF 25V				C1008	1-107-826-11	CERAMIC CHIP 0.1uF 10%		16V	
C300	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V				C1009	1-107-826-11	CERAMIC CHIP 0.1uF 10%		16V	
C301	1-135-091-00	TANTALUM CHIP 1uF 20% 16V				C1101	1-107-826-11	CERAMIC CHIP 0.1uF 10%		16V	
C302	1-164-156-11	CERAMIC CHIP 0.1uF 25V				C1102	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
C303	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V				C1103	1-135-259-11	TANTAL. CHIP 10uF 20%		6.3V	
C304	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V				C1104	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
C305	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V				C1105	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
C306	1-107-820-11	CERAMIC CHIP 0.1uF 16V				C1107	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
C307	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V				C1108	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
C308	1-164-346-11	CERAMIC CHIP 1uF 16V				C1109	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
C309	1-115-156-11	CERAMIC CHIP 1uF 10V				C1115	1-164-505-11	CERAMIC CHIP 2.2uF 16V			
C310	1-107-820-11	CERAMIC CHIP 0.1uF 16V				C1116	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
C311	1-107-820-11	CERAMIC CHIP 0.1uF 16V				C1117	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
						C1119	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	
						C1120	1-164-505-11	CERAMIC CHIP 2.2uF 16V			
						C1121	1-104-851-11	TANTAL. CHIP 10uF 20%		10V	
						C1123	1-164-943-11	CERAMIC CHIP 0.01uF 10%		16V	

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C1124	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7526	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1125	1-164-505-11	CERAMIC CHIP	2.2uF		16V	C7527	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1126	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V						
C1127	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7534	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C1130	1-104-848-11	TANTAL. CHIP	100uF	20%	4V	C7536	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
						C7540	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C1131	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V	C7541	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C1132	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7542	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C1134	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V						
C1135	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7543	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C1136	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7544	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
						C7545	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C1137	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	C7546	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C1138	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7547	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1145	1-104-848-11	TANTAL. CHIP	100uF	20%	4V						
C2300	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7559	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C2305	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7560	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
						C7564	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C2307	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7566	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C2308	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C7567	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C2309	1-107-820-11	CERAMIC CHIP	0.1uF		16V						
C2310	1-107-820-11	CERAMIC CHIP	0.1uF		16V	C7568	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C2311	1-107-820-11	CERAMIC CHIP	0.1uF		16V	C7569	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
						C7570	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C2312	1-107-820-11	CERAMIC CHIP	0.1uF		16V	C7571	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C2313	1-107-820-11	CERAMIC CHIP	0.1uF		16V	C7577	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C2314	1-107-820-11	CERAMIC CHIP	0.1uF		16V						
C2315	1-107-820-11	CERAMIC CHIP	0.1uF		16V	C7802	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C2317	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V	C7803	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
						C7804	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C2318	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	C7805	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C2319	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7806	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	16V
C2320	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V						
C2321	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7807	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	16V
C2324	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7808	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
						C7809	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C2325	1-164-854-11	CERAMIC CHIP	15PF	5%	16V	C7810	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C2326	1-164-858-11	CERAMIC CHIP	22PF	5%	16V	C7811	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C2327	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V						
C2328	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	C7812	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2329	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7813	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
						C7814	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C2330	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7815	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C2331	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7817	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C2332	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V						
C2335	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C7818	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C7502	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	C7819	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
						C8001	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7503	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	C8002	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7504	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	C8401	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7505	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V						
C7506	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V	C8402	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7507	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C8403	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
						C8404	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C7508	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V	C8405	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7509	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C8406	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7510	1-107-820-11	CERAMIC CHIP	0.1uF		16V						
C7511	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C8408	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7513	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	C8409	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
						C8410	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C7514	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	C8411	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C7515	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	C8412	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C7516	1-135-201-11	TANTALUM CHIP	10uF	20%	4V						
C7518	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V	C8413	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C7519	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V	C8414	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
						C8415	1-164-668-11	CERAMIC CHIP	510PF	5%	50V
C7522	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C8416	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C7524	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C8417	1-164-844-11	CERAMIC CHIP	4PF	0.25PF	16V
C7525	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V						

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C8418	1-135-091-00	TANTALUM CHIP 1uF 20% 16V		FB203	1-414-228-11	INDUCTOR, FERRITE BEAD	
C8419	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		FB204	1-414-228-11	INDUCTOR, FERRITE BEAD	
C8420	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V		FB205	1-414-228-11	INDUCTOR, FERRITE BEAD	
C8421	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V		FB206	1-500-284-21	INDUCTOR, FERRITE BEAD	
C8422	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V					
C8424	1-104-847-11	TANTAL. CHIP 22uF 20% 4V		FB207	1-500-284-21	INDUCTOR, FERRITE BEAD	
C8425	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V		FB401	1-414-228-11	INDUCTOR, FERRITE BEAD	
C8426	1-135-145-11	TANTALUM CHIP 0.47uF 10% 35V		FB1101	1-543-955-11	BEAD, FERRITE (CHIP)	
C8427	1-135-145-11	TANTALUM CHIP 0.47uF 10% 35V		FB7501	1-543-955-11	BEAD, FERRITE (CHIP)	
C8428	1-107-823-11	CERAMIC CHIP 0.47uF 10% 16V				< FLUORESCENT INDICATOR >	
C8429	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V		FL1101	1-233-733-21	FILTER, LOW PASS	
C8430	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V		FL1102	1-233-732-21	FILTER, BAND PASS (TRV7)	
C8431	1-164-864-11	CERAMIC CHIP 39PF 5% 16V		FL1102	1-233-735-21	FILTER, BAND PASS (4.43MHZ)(TRV7E)	
C8432	1-164-862-11	CERAMIC CHIP 33PF 5% 16V				< IC >	
C8434	1-135-201-11	TANTALUM CHIP 10uF 20% 4V		IC200	8-752-379-51	IC CXD2426R	
C9022	1-104-851-11	TANTAL. CHIP 10uF 20% 10V		IC202	8-759-445-93	IC AK6440AM-E2	
C9024	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V		IC205	1-801-734-11	IC TGA-P912032-HA	
C9109	1-164-850-11	CERAMIC CHIP 10PF 0.5PF 16V		IC206	1-801-472-11	IC TGA-D2176HA	
C9110	1-164-850-11	CERAMIC CHIP 10PF 0.5PF 16V		IC207	8-759-096-87	IC TC7WU04FU(TE12R)	
		< CONNECTOR >		IC208	8-759-067-52	IC MB88347PFV-G-BND-ER	
CN200	1-779-374-11	CONNECTOR, BOARD TO BOARD 50P		IC211	8-752-380-65	IC CXD2175AR	
CN9921	1-779-375-11	CONNECTOR, BOARD TO BOARD 80P		IC214	8-752-386-05	IC CXD3119R-T6	
CN9922	1-750-341-11	CONNECTOR, FFC/EPC (ZIF) 18P		IC216	8-759-462-43	IC AD9800JCSTRL	
CN9923	1-750-344-11	CONNECTOR, FFC/EPC (ZIF) 24P		IC400	8-759-337-40	IC NJM2904V(TE2)	
CN9924	1-779-373-11	CONNECTOR, BOARD TO BOARD 20P		IC401	8-759-444-87	IC NJM324V(TE2)	
CN9925	1-774-929-21	CONNECTOR, FFC/FPC 39P		IC402	8-752-377-38	IC CXD2430N	
CN9926	1-779-373-11	CONNECTOR, BOARD TO BOARD 20P		IC403	8-759-365-18	IC uPD16833G3-E2	
CN9927	1-774-928-21	CONNECTOR, FFC/FPC 27P		IC1001	8-752-384-33	IC CXD3121R	
CN9928	1-750-321-41	CONNECTOR, BOARD TO BOARD 20P		IC1002	8-759-079-52	IC TC74VHC08FS(EL)	
* CN9929	1-764-523-11	CONNECTOR, FFC/FPC (ZIF) 14P		IC1101	1-801-474-11	IC TGA-D3100HA	
		< DIODE >		IC1102	8-759-082-58	IC TC7W08FU	
D200	8-713-102-28	DIODE 1T379-04-T8A		IC1103	8-752-081-19	IC CXA2008R-T4	
D202	8-713-101-85	DIODE 1T363-01-T8A		IC1104	8-759-447-76	IC uPD6466GS-621-GLG-E2	
D203	8-713-101-85	DIODE 1T363-01-T8A		IC2300	8-759-398-90	IC S-81236PG-P7-T1	
D1201	8-719-062-16	DIODE 01ZA8.2(TPL3)		IC2301	8-759-424-79	IC S-8423YFS-T2	
D1202	8-719-062-16	DIODE 01ZA8.2(TPL3)		IC2302	8-759-469-76	IC S579154PZ-TEB	
D1203	8-719-056-61	DIODE MAZS032008SO		IC2303	8-759-445-93	IC AK6440AM-E2	
D2300	8-719-421-27	DIODE MA728		IC2304	8-759-059-05	IC TL1596CPW	
D2301	8-719-056-23	DIODE MA2S111-(K8).SO		IC7501	8-759-512-62	IC CXA1497N	
D2302	8-719-420-51	DIODE MA729		IC7502	8-759-252-90	IC TLV2362IPW-ELM1500	
D2303	8-719-420-51	DIODE MA729		IC7503	8-759-252-90	IC TLV2362IPW-ELM1500	
D2304	8-719-056-23	DIODE MA2S111-(K8).SO		IC7504	8-759-326-98	IC AK4503-VF-E2	
D2305	8-719-056-23	DIODE MA2S111-(K8).SO		IC7508	8-759-252-90	IC TLV2362IPW-ELM1500	
D7502	8-719-056-23	DIODE MA2S111-(K8).SO		IC7801	8-759-299-00	IC BA7785FS-E2	
D7504	8-719-056-23	DIODE MA2S111-(K8).SO		IC8001	8-759-427-85	IC MB88146APFV-G-BND-ER	
D7506	8-719-421-67	DIODE MA132WK		IC8401	8-759-474-38	IC LA9510W-B-TBM	
D7507	8-719-056-23	DIODE MA2S111-(K8).SO		IC8402	8-759-464-04	IC S-81340HG-KJ-T1	
D7508	8-719-056-23	DIODE MA2S111-(K8).SO		IC9012	8-759-058-60	IC TC7SU04FU(TE85R)	
D7510	8-719-056-23	DIODE MA2S111-(K8).SO				< JACK >	
D7511	8-719-421-67	DIODE MA132WK		J1201	1-566-850-31	CONNECTOR, (S) TERMINAL 4P (S VIDEO OUT)	
D7513	8-719-056-23	DIODE MA2S111-(K8).SO				< COIL >	
D7514	8-719-421-67	DIODE MA132WK		L203	1-414-754-11	INDUCTOR 10uH	
D7801	8-719-056-23	DIODE MA2S111-(K8).SO		L207	1-412-940-21	INDUCTOR 1.2uH	
		< FERRITE BEAD >		L209	1-414-752-11	INDUCTOR 2.2uH	
FB200	1-414-228-11	INDUCTOR, FERRITE BEAD		L218	1-414-754-11	INDUCTOR 10uH	

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
L401	1-414-754-11	INDUCTOR	10uH			R226	1-218-977-11	METAL GLAZE	100K	5%	1/16W
L402	1-414-754-11	INDUCTOR	10uH			R227	1-218-977-11	METAL GLAZE	100K	5%	1/16W
L1001	1-414-754-11	INDUCTOR	10uH			R228	1-218-977-11	METAL GLAZE	100K	5%	1/16W
L1101	1-216-295-91	CONDUCTOR, CHIP (2012)				R234	1-216-813-11	METAL CHIP	220	5%	1/16W
L1103	1-216-295-91	CONDUCTOR, CHIP (2012)									
L2301	1-414-078-11	INDUCTOR	10uH			R236	1-218-977-11	METAL GLAZE	100K	5%	1/16W
						R238	1-218-989-11	METAL GLAZE	1M	5%	1/16W
L7501	1-414-754-11	INDUCTOR	10uH			R240	1-218-967-11	METAL GLAZE	15K	5%	1/16W
L7505	1-414-754-11	INDUCTOR	10uH			R244	1-218-977-11	METAL GLAZE	100K	5%	1/16W
L8402	1-412-948-11	INDUCTOR	5.6uH			R245	1-218-977-11	METAL GLAZE	100K	5%	1/16W
L8403	1-412-957-11	INDUCTOR	33uH								
L8404	1-412-957-11	INDUCTOR	33uH			R257	1-216-833-11	METAL CHIP	10K	5%	1/16W
						R260	1-218-973-11	METAL GLAZE	47K	5%	1/16W
L9001	1-414-754-11	INDUCTOR	10uH			R283	1-218-941-11	METAL GLAZE	100	5%	1/16W
						R286	1-218-973-11	METAL GLAZE	47K	5%	1/16W
						R295	1-218-977-11	METAL GLAZE	100K	5%	1/16W
		< TRANSISTOR >									
Q203	8-729-037-74	TRANSISTOR	UN9213J-(TX).SO			R298	1-218-953-11	METAL GLAZE	1K	5%	1/16W
Q204	8-729-037-61	TRANSISTOR	UN9113J-(TX).SO			R299	1-218-953-11	METAL GLAZE	1K	5%	1/16W
Q205	8-729-037-74	TRANSISTOR	UN9213J-(TX).SO			R304	1-218-929-11	METAL GLAZE	10	5%	1/16W
Q207	8-729-037-61	TRANSISTOR	UN9113J-(TX).SO			R305	1-218-929-11	METAL GLAZE	10	5%	1/16W
Q208	8-729-037-74	TRANSISTOR	UN9213J-(TX).SO			R306	1-218-975-11	METAL GLAZE	68K	5%	1/16W
Q401	8-729-037-52	TRANSISTOR	2SD2216J-QR(TX).SO			R307	1-164-943-11	CERAMIC CHIP	0.01MF	10%	16V
Q402	8-729-037-52	TRANSISTOR	2SD2216J-QR(TX).SO			R308	1-218-972-11	METAL GLAZE	39K	5%	1/16W
Q403	8-729-037-53	TRANSISTOR	2SB1462J-QR(TX).SO			R309	1-218-961-11	METAL GLAZE	4.7K	5%	1/16W
Q1001	8-729-427-70	TRANSISTOR	XP4401			R310	1-218-990-11	CONDUCTOR, CHIP (1005)			
Q1002	8-729-427-70	TRANSISTOR	XP4401			R313	1-218-941-11	METAL GLAZE	100	5%	1/16W
Q1003	8-729-427-70	TRANSISTOR	XP4401			R314	1-218-941-11	METAL GLAZE	100	5%	1/16W
Q1101	8-729-425-50	TRANSISTOR	2SB1462Q			R318	1-218-973-11	METAL GLAZE	47K	5%	1/16W
Q1102	8-729-425-50	TRANSISTOR	2SB1462Q								(TRV7)
Q1103	8-729-425-50	TRANSISTOR	2SB1462Q			R319	1-218-973-11	METAL GLAZE	47K	5%	1/16W
Q1105	8-729-141-48	TRANSISTOR	2SB624-BV345								(TRV7E)
						R320	1-218-973-11	METAL GLAZE	47K	5%	1/16W
											(TRV7E)
Q1107	8-729-427-42	TRANSISTOR	XP4211			R321	1-218-973-11	METAL GLAZE	47K	5%	1/16W
Q2301	8-729-428-88	TRANSISTOR	UN9113								(TRV7)
Q2302	8-729-427-70	TRANSISTOR	XP4401								
Q2303	8-729-141-48	TRANSISTOR	2SB624-BV345			R323	1-216-864-11	METAL CHIP	0	5%	1/16W
Q2304	8-729-024-48	TRANSISTOR	2SK1830-TE85L			R324	1-216-864-11	METAL CHIP	0	5%	1/16W
						R325	1-218-990-11	CONDUCTOR, CHIP (1005)			
Q2305	8-729-032-62	TRANSISTOR	2SJ347-TE85L			R400	1-216-797-11	METAL CHIP	10	5%	1/16W
Q2308	8-729-037-72	TRANSISTOR	UN9211J-(TX).SO			R401	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W
Q7501	8-729-037-72	TRANSISTOR	UN9211J-(TX).SO								
Q7502	8-729-425-50	TRANSISTOR	2SB1462Q			R402	1-218-956-11	METAL GLAZE	1.8K	5%	1/16W
Q7505	8-729-427-72	TRANSISTOR	XP4501			R403	1-218-977-11	METAL GLAZE	100K	5%	1/16W
						R404	1-218-965-11	METAL GLAZE	10K	5%	1/16W
Q7506	8-729-037-63	TRANSISTOR	UN9115J-(TX).SO			R405	1-218-977-11	METAL GLAZE	100K	5%	1/16W
Q7507	8-729-428-88	TRANSISTOR	UN9113			R406	1-218-967-11	METAL GLAZE	15K	5%	1/16W
Q7511	8-729-427-46	TRANSISTOR	XP4213								
Q7515	8-729-037-63	TRANSISTOR	UN9115J-(TX).SO			R407	1-218-947-11	METAL GLAZE	330	5%	1/16W
Q7801	8-729-425-64	TRANSISTOR	2SD2216Q			R408	1-218-969-11	METAL GLAZE	22K	5%	1/16W
						R409	1-218-977-11	METAL GLAZE	100K	5%	1/16W
Q7802	8-729-425-64	TRANSISTOR	2SD2216Q			R410	1-218-968-11	METAL GLAZE	18K	5%	1/16W
Q8401	8-729-425-50	TRANSISTOR	2SB1462Q			R411	1-218-953-11	METAL GLAZE	1K	5%	1/16W
Q9006	8-729-425-50	TRANSISTOR	2SB1462Q								
Q9020	8-729-425-50	TRANSISTOR	2SB1462Q			R412	1-218-968-11	METAL GLAZE	18K	5%	1/16W
Q9022	8-729-427-42	TRANSISTOR	XP4211			R413	1-218-965-11	METAL GLAZE	10K	5%	1/16W
						R414	1-218-980-11	METAL GLAZE	180K	5%	1/16W
		< RESISTOR >				R415	1-218-962-11	METAL GLAZE	5.6K	5%	1/16W
						R416	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R205	1-218-985-11	METAL GLAZE	470K	5%	1/16W						
R210	1-218-977-11	METAL GLAZE	100K	5%	1/16W	R417	1-218-968-11	METAL GLAZE	18K	5%	1/16W
R213	1-218-977-11	METAL GLAZE	100K	5%	1/16W	R418	1-218-980-11	METAL GLAZE	180K	5%	1/16W
R223	1-218-977-11	METAL GLAZE	100K	5%	1/16W	R421	1-218-983-11	METAL GLAZE	330K	5%	1/16W
R224	1-218-962-11	METAL GLAZE	5.6K	5%	1/16W	R422	1-218-961-11	METAL GLAZE	4.7K	5%	1/16W
						R423	1-218-974-11	METAL GLAZE	56K	5%	1/16W
R225	1-218-965-11	METAL GLAZE	10K	5%	1/16W						

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R424	1-218-974-11	METAL GLAZE	56K	5%	1/16W	R1122	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R1000	1-218-971-11	METAL GLAZE	33K	5%	1/16W	R1125	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W
R1003	1-218-967-11	METAL GLAZE	15K	5%	1/16W (TRV7)	R1131	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R1003	1-218-969-11	METAL GLAZE	22K	5%	1/16W (TRV7E)	R1132	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R1004	1-218-967-11	METAL GLAZE	15K	5%	1/16W (TRV7)	R1133	1-218-985-11	METAL GLAZE	470K	5%	1/16W
R1004	1-218-969-11	METAL GLAZE	22K	5%	1/16W (TRV7E)	R1134	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R1005	1-218-967-11	METAL GLAZE	15K	5%	1/16W (TRV7)	R1135	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R1005	1-218-971-11	METAL GLAZE	33K	5%	1/16W (TRV7E)	R1136	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R1006	1-218-967-11	METAL GLAZE	15K	5%	1/16W (TRV7)	R1137	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R1006	1-218-971-11	METAL GLAZE	33K	5%	1/16W (TRV7E)	R1138	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R1008	1-218-953-11	METAL GLAZE	1K	5%	1/16W	R1139	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R1009	1-218-967-11	METAL GLAZE	15K	5%	1/16W	R1141	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R1010	1-218-970-11	METAL GLAZE	27K	5%	1/16W	R1142	1-218-935-11	METAL GLAZE	33	5%	1/16W
R1011	1-218-953-11	METAL GLAZE	1K	5%	1/16W	R1143	1-218-935-11	METAL GLAZE	33	5%	1/16W
R1012	1-218-967-11	METAL GLAZE	15K	5%	1/16W	R1144	1-218-935-11	METAL GLAZE	33	5%	1/16W
R1013	1-218-953-11	METAL GLAZE	1K	5%	1/16W	R1145	1-218-973-11	METAL GLAZE	47K	5%	1/16W
R1014	1-218-967-11	METAL GLAZE	15K	5%	1/16W	R1147	1-218-936-11	METAL GLAZE	39	5%	1/16W
R1015	1-218-953-11	METAL GLAZE	1K	5%	1/16W	R1148	1-218-936-11	METAL GLAZE	39	5%	1/16W
R1016	1-218-971-11	METAL GLAZE	33K	5%	1/16W	R1149	1-218-936-11	METAL GLAZE	39	5%	1/16W
R1017	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W	R1152	1-218-965-11	METAL GLAZE	10K	5%	1/16W
R1018	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W	R1153	1-218-960-11	METAL GLAZE	3.9K	5%	1/16W
R1019	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W	R1154	1-218-990-11	CONDUCTOR, CHIP (1005)			
R1020	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W	R1157	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R1021	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W	R1158	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R1022	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W	R1163	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R1029	1-218-965-11	METAL GLAZE	10K	5%	1/16W	R1164	1-218-969-11	METAL GLAZE	22K	5%	1/16W
R1030	1-218-971-11	METAL GLAZE	33K	5%	1/16W	R1165	1-218-971-11	METAL GLAZE	33K	5%	1/16W
R1031	1-218-971-11	METAL GLAZE	33K	5%	1/16W	R1166	1-218-985-11	METAL GLAZE	470K	5%	1/16W
R1033	1-218-990-11	CONDUCTOR, CHIP (1005)				R2302	1-218-934-11	METAL GLAZE	27	5%	1/16W
R1034	1-218-990-11	CONDUCTOR, CHIP (1005)				R2303	1-218-973-11	METAL GLAZE	47K	5%	1/16W
R1036	1-218-990-11	CONDUCTOR, CHIP (1005)				R2304	1-218-989-11	METAL GLAZE	1M	5%	1/16W
R1101	1-218-990-11	CONDUCTOR, CHIP (1005)				R2305	1-218-985-11	METAL GLAZE	470K	5%	1/16W
R1102	1-218-990-11	CONDUCTOR, CHIP (1005)				R2306	1-218-985-11	METAL GLAZE	470K	5%	1/16W
R1103	1-218-948-11	METAL GLAZE	390	5%	1/16W	R2308	1-218-959-11	METAL GLAZE	3.3K	5%	1/16W
R1104	1-218-961-11	METAL GLAZE	4.7K	5%	1/16W	R2309	1-218-959-11	METAL GLAZE	3.3K	5%	1/16W
R1105	1-218-990-11	CONDUCTOR, CHIP (1005)				R2310	1-218-959-11	METAL GLAZE	3.3K	5%	1/16W
R1106	1-218-990-11	CONDUCTOR, CHIP (1005)				R2311	1-218-941-11	METAL GLAZE	100	5%	1/16W
R1107	1-218-947-11	METAL GLAZE	330	5%	1/16W	R2312	1-218-941-11	METAL GLAZE	100	5%	1/16W
R1108	1-218-990-11	CONDUCTOR, CHIP (1005)				R2313	1-218-985-11	METAL GLAZE	470K	5%	1/16W
R1109	1-218-959-11	METAL GLAZE	3.3K	5%	1/16W	R2314	1-218-985-11	METAL GLAZE	470K	5%	1/16W
R1110	1-218-990-11	CONDUCTOR, CHIP (1005)				R2315	1-218-985-11	METAL GLAZE	470K	5%	1/16W
R1111	1-218-990-11	CONDUCTOR, CHIP (1005)				R2316	1-218-985-11	METAL GLAZE	470K	5%	1/16W
R1112	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W	R2317	1-218-985-11	METAL GLAZE	470K	5%	1/16W
R1113	1-218-990-11	CONDUCTOR, CHIP (1005)				R2325	1-218-955-11	METAL GLAZE	1.5K	5%	1/16W
R1114	1-218-990-11	CONDUCTOR, CHIP (1005)				R2326	1-218-961-11	METAL GLAZE	4.7K	5%	1/16W
R1115	1-218-990-11	CONDUCTOR, CHIP (1005)				R2327	1-216-791-11	METAL CHIP	3.3	5%	1/16W
R1116	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W	R2328	1-218-962-11	METAL GLAZE	5.6K	5%	1/16W
R1118	1-218-990-11	CONDUCTOR, CHIP (1005)				R2329	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W
R1119	1-218-953-11	METAL GLAZE	1K	5%	1/16W	R2332	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R1120	1-218-953-11	METAL GLAZE	1K	5%	1/16W	R2333	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R1121	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W	R2334	1-218-973-11	METAL GLAZE	47K	5%	1/16W
						R2335	1-218-973-11	METAL GLAZE	47K	5%	1/16W
						R2336	1-218-973-11	METAL GLAZE	47K	5%	1/16W
						R2337	1-218-977-11	METAL GLAZE	100K	5%	1/16W
						R2338	1-218-945-11	METAL GLAZE	220	5%	1/16W
						R2339	1-218-965-11	METAL GLAZE	10K	5%	1/16W
						R2340	1-218-965-11	METAL GLAZE	10K	5%	1/16W
						R2341	1-218-965-11	METAL GLAZE	10K	5%	1/16W

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
R2342	1-218-965-11	METAL GLAZE	10K	5%	1/16W		R7520	1-218-949-11	METAL GLAZE	470	5%	1/16W	
R2343	1-218-989-11	METAL GLAZE	1M	5%	1/16W		R7521	1-218-949-11	METAL GLAZE	470	5%	1/16W	
R2344	1-218-965-11	METAL GLAZE	10K	5%	1/16W		R7522	1-218-949-11	METAL GLAZE	470	5%	1/16W	
R2345	1-218-965-11	METAL GLAZE	10K	5%	1/16W		R7523	1-218-949-11	METAL GLAZE	470	5%	1/16W	
R2346	1-218-965-11	METAL GLAZE	10K	5%	1/16W		R7524	1-218-949-11	METAL GLAZE	470	5%	1/16W	
R2347	1-218-953-11	METAL GLAZE	1K	5%	1/16W		R7525	1-208-713-11	METAL GLAZE	18K	0.50%	1/16W	
R2348	1-218-953-11	METAL GLAZE	1K	5%	1/16W		R7526	1-208-707-11	METAL GLAZE	10K	0.50%	1/16W	
R2349	1-218-953-11	METAL GLAZE	1K	5%	1/16W		R7527	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R2350	1-218-953-11	METAL GLAZE	1K	5%	1/16W		R7528	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R2351	1-218-953-11	METAL GLAZE	1K	5%	1/16W		R7529	1-218-990-11	CONDUCTOR, CHIP (1005)				
R2353	1-218-953-11	METAL GLAZE	1K	5%	1/16W		R7530	1-218-990-11	CONDUCTOR, CHIP (1005)				
R2354	1-218-973-11	METAL GLAZE	47K	5%	1/16W		R7531	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R2355	1-218-977-11	METAL GLAZE	100K	5%	1/16W		R7532	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R2356	1-218-977-11	METAL GLAZE	100K	5%	1/16W		R7533	1-218-929-11	METAL GLAZE	10	5%	1/16W	
R2357	1-218-953-11	METAL GLAZE	1K	5%	1/16W		R7534	1-208-707-11	METAL GLAZE	10K	0.50%	1/16W	
R2358	1-218-953-11	METAL GLAZE	1K	5%	1/16W		R7535	1-208-707-11	METAL GLAZE	10K	0.50%	1/16W	
R2359	1-219-570-11	METAL GLAZE	10M	5%	1/16W		R7536	1-218-969-11	METAL GLAZE	22K	5%	1/16W	
R2360	1-218-949-11	METAL GLAZE	470	5%	1/16W		R7537	1-218-969-11	METAL GLAZE	22K	5%	1/16W	
R2361	1-218-977-11	METAL GLAZE	100K	5%	1/16W		R7538	1-218-969-11	METAL GLAZE	22K	5%	1/16W	
R2362	1-218-990-11	CONDUCTOR, CHIP (1005)					R7539	1-218-969-11	METAL GLAZE	22K	5%	1/16W	
R2363	1-218-977-11	METAL GLAZE	100K	5%	1/16W		R7541	1-218-969-11	METAL GLAZE	22K	5%	1/16W	
R2364	1-218-977-11	METAL GLAZE	100K	5%	1/16W		R7542	1-218-969-11	METAL GLAZE	22K	5%	1/16W	
R2365	1-218-985-11	METAL GLAZE	470K	5%	1/16W		R7543	1-218-969-11	METAL GLAZE	22K	5%	1/16W	
R2366	1-218-965-11	METAL GLAZE	10K	5%	1/16W		R7544	1-218-969-11	METAL GLAZE	22K	5%	1/16W	
R2367	1-218-985-11	METAL GLAZE	470K	5%	1/16W		R7545	1-218-974-11	METAL GLAZE	56K	5%	1/16W	
R2368	1-218-958-11	METAL GLAZE	2.7K	5%	1/16W		R7546	1-218-974-11	METAL GLAZE	56K	5%	1/16W	
R2369	1-218-981-11	METAL GLAZE	220K	5%	1/16W		R7547	1-218-974-11	METAL GLAZE	56K	5%	1/16W	
R2379	1-218-977-11	METAL GLAZE	100K	5%	1/16W		R7548	1-218-974-11	METAL GLAZE	56K	5%	1/16W	
R2380	1-218-953-11	METAL GLAZE	1K	5%	1/16W		R7549	1-218-969-11	METAL GLAZE	22K	5%	1/16W	
R2381	1-218-985-11	METAL GLAZE	470K	5%	1/16W		R7550	1-218-969-11	METAL GLAZE	22K	5%	1/16W	
R2382	1-218-985-11	METAL GLAZE	470K	5%	1/16W		R7562	1-218-953-11	METAL GLAZE	1K	5%	1/16W	
R2383	1-218-973-11	METAL GLAZE	47K	5%	1/16W		R7563	1-218-953-11	METAL GLAZE	1K	5%	1/16W	
R2386	1-218-977-11	METAL GLAZE	100K	5%	1/16W		R7567	1-218-945-11	METAL GLAZE	220	5%	1/16W	
R2387	1-218-977-11	METAL GLAZE	100K	5%	1/16W		R7568	1-218-945-11	METAL GLAZE	220	5%	1/16W	
R2388	1-218-973-11	METAL GLAZE	47K	5%	1/16W		R7569	1-218-971-11	METAL GLAZE	33K	5%	1/16W	
R2390	1-218-977-11	METAL GLAZE	100K	5%	1/16W		R7570	1-218-969-11	METAL GLAZE	22K	5%	1/16W	
R2391	1-218-953-11	METAL GLAZE	1K	5%	1/16W		R7572	1-216-861-11	METAL CHIP	2.2M	5%	1/16W	
R2392	1-218-953-11	METAL GLAZE	1K	5%	1/16W		R7573	1-218-971-11	METAL GLAZE	33K	5%	1/16W	
R7501	1-218-973-11	METAL GLAZE	47K	5%	1/16W		R7574	1-218-969-11	METAL GLAZE	22K	5%	1/16W	
R7502	1-218-956-11	METAL GLAZE	1.8K	5%	1/16W		R7575	1-218-966-11	METAL GLAZE	12K	5%	1/16W	
R7503	1-218-987-11	METAL GLAZE	680K	5%	1/16W		R7576	1-218-966-11	METAL GLAZE	12K	5%	1/16W	
R7504	1-220-398-11	METAL GLAZE	1.5M	5%	1/16W		R7577	1-218-971-11	METAL GLAZE	33K	5%	1/16W	
R7505	1-218-965-11	METAL GLAZE	10K	5%	1/16W		R7578	1-218-971-11	METAL GLAZE	33K	5%	1/16W	
R7506	1-218-990-11	CONDUCTOR, CHIP (1005)					R7579	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R7507	1-216-853-11	METAL CHIP	470K	5%	1/16W		R7580	1-208-707-11	METAL GLAZE	10K	0.50%	1/16W	
R7508	1-218-933-11	METAL GLAZE	22	5%	1/16W		R7581	1-208-707-11	METAL GLAZE	10K	0.50%	1/16W	
R7509	1-218-965-11	METAL GLAZE	10K	5%	1/16W		R7582	1-208-713-11	METAL GLAZE	18K	0.50%	1/16W	
R7510	1-218-965-11	METAL GLAZE	10K	5%	1/16W		R7583	1-208-707-11	METAL GLAZE	10K	0.50%	1/16W	
R7511	1-218-953-11	METAL GLAZE	1K	5%	1/16W		R7584	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R7512	1-218-965-11	METAL GLAZE	10K	5%	1/16W		R7585	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R7513	1-218-977-11	METAL GLAZE	100K	5%	1/16W		R7594	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R7514	1-218-984-11	METAL GLAZE	390K	5%	1/16W		R7801	1-218-990-11	CONDUCTOR, CHIP (1005)				
R7515	1-218-949-11	METAL GLAZE	470	5%	1/16W		R7802	1-218-990-11	CONDUCTOR, CHIP (1005)				
R7516	1-218-977-11	METAL GLAZE	100K	5%	1/16W		R7803	1-218-942-11	METAL GLAZE	120	5%	1/16W	
R7517	1-218-977-11	METAL GLAZE	100K	5%	1/16W		R7804	1-218-942-11	METAL GLAZE	120	5%	1/16W	
R7518	1-218-949-11	METAL GLAZE	470	5%	1/16W		R7805	1-218-951-11	METAL GLAZE	680	5%	1/16W	
R7519	1-218-949-11	METAL GLAZE	470	5%	1/16W		R7806	1-218-951-11	METAL GLAZE	680	5%	1/16W	
							R7812	1-218-953-11	METAL GLAZE	1K	5%	1/16W	

Ref. No.	Part No.	Description	Remark
R7814	1-218-977-11	METAL GLAZE 100K 5%	1/16W
R7815	1-218-971-11	METAL GLAZE 33K 5%	1/16W
R7816	1-218-969-11	METAL GLAZE 22K 5%	1/16W
R7820	1-218-965-11	METAL GLAZE 10K 5%	1/16W
R8001	1-218-990-11	CONDUCTOR, CHIP (1005)	
R8002	1-218-977-11	METAL GLAZE 100K 5%	1/16W
R8003	1-218-977-11	METAL GLAZE 100K 5%	1/16W
R8004	1-218-977-11	METAL GLAZE 100K 5%	1/16W
R8005	1-218-977-11	METAL GLAZE 100K 5%	1/16W
R8401	1-218-973-11	METAL GLAZE 47K 5%	1/16W
R8402	1-218-990-11	CONDUCTOR, CHIP (1005)	
R8403	1-218-973-11	METAL GLAZE 47K 5%	1/16W
R8405	1-218-965-11	METAL GLAZE 10K 5%	1/16W
R8406	1-218-965-11	METAL GLAZE 10K 5%	1/16W
R8407	1-218-989-11	METAL GLAZE 1M 5%	1/16W
R8409	1-208-715-11	METAL GLAZE 22K 0.50%	1/16W
R8410	1-218-947-11	METAL GLAZE 330 5%	1/16W
R8411	1-218-953-11	METAL GLAZE 1K 5%	1/16W
R8412	1-218-990-11	CONDUCTOR, CHIP (1005)(TRV7E)	
R8413	1-218-949-11	METAL GLAZE 470 5%	1/16W
R8415	1-218-950-11	METAL GLAZE 560 5%	1/16W
R8416	1-218-963-11	METAL GLAZE 6.8K 5%	1/16W
R8417	1-218-949-11	METAL GLAZE 470 5%	1/16W
R8418	1-218-949-11	METAL GLAZE 470 5%	1/16W
R8421	1-218-990-11	CONDUCTOR, CHIP (1005)	
R8423	1-218-979-11	METAL GLAZE 150K 5%	1/16W
R8424	1-218-979-11	METAL GLAZE 150K 5%	1/16W
R8429	1-218-966-11	METAL GLAZE 12K 5%	1/16W
R8430	1-218-961-11	METAL GLAZE 4.7K 5%	1/16W
R8431	1-218-961-11	METAL GLAZE 4.7K 5%	1/16W
R8432	1-218-964-11	METAL GLAZE 8.2K 5%	1/16W
R8435	1-218-955-11	METAL GLAZE 1.5K 5%	1/16W
R8438	1-218-990-11	CONDUCTOR, CHIP (1005)	
R8439	1-218-960-11	METAL GLAZE 3.9K 5%	1/16W
R8440	1-218-947-11	METAL GLAZE 330 5%	1/16W
R9035	1-218-945-11	METAL GLAZE 220 5%	1/16W
R9129	1-218-973-11	METAL GLAZE 47K 5%	1/16W
R9130	1-218-953-11	METAL GLAZE 1K 5%	1/16W
R9133	1-218-953-11	METAL GLAZE 1K 5%	1/16W
R9134	1-218-989-11	METAL GLAZE 1M 5%	1/16W
R9135	1-218-961-11	METAL GLAZE 4.7K 5%	1/16W
R9136	1-218-965-11	METAL GLAZE 10K 5%	1/16W
R9137	1-218-965-11	METAL GLAZE 10K 5%	1/16W
R9138	1-218-965-11	METAL GLAZE 10K 5%	1/16W
R9139	1-218-965-11	METAL GLAZE 10K 5%	1/16W
R9140	1-218-965-11	METAL GLAZE 10K 5%	1/16W
R9921	1-216-296-91	CONDUCTOR, CHIP (3216)	
R9922	1-217-671-11	METAL CHIP 1 5%	1/10W
R9923	1-217-671-11	METAL CHIP 1 5%	1/10W
R9924	1-218-990-11	CONDUCTOR, CHIP (1005)	
< SWITCH >			
S2301	1-771-106-11	SWITCH, TACTILE (RESET)	
< VIBRATOR >			
X200	1-767-400-11	VIBRATOR, CRYSTAL (36MHz)	
X201	1-767-450-11	VIBRATOR, CERAMIC (20MHz)	

Ref. No.	Part No.	Description	Remark
X2300	1-767-450-11	VIBRATOR, CERAMIC (20MHz)	
X2301	1-760-458-21	VIBRATOR, CRYSTAL (32.768kHz)	
X9001	1-579-466-11	VIBRATOR, CRYSTAL (3.57954MHz)(TRV7)	
X9001	1-579-661-21	OSCILLATOR, CRYSTAL (4.43619MHz)(TRV7E)	
A-7073-059-A CD-168 BOARD, COMPLETE			

(Ref. No. 1,000 Series)			
(IC101 is not included to the mounted board)			
< CAPACITOR >			
C101	1-104-851-11	TANTAL. CHIP 10uF 20%	10V
C102	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C103	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C106	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C108	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C109	1-113-990-11	TANTAL. CHIP 15uF 20%	16V
C110	1-162-915-11	CERAMIC CHIP 10PF 0.5PF	50V
C500	1-104-847-11	TANTAL. CHIP 22uF 20%	4V
C501	1-104-847-11	TANTAL. CHIP 22uF 20%	4V
C502	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C503	1-164-245-11	CERAMIC CHIP 0.015uF 10%	25V
C504	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C505	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C506	1-164-245-11	CERAMIC CHIP 0.015uF 10%	25V
C507	1-164-489-11	CERAMIC CHIP 0.22uF 10%	16V
C508	1-164-489-11	CERAMIC CHIP 0.22uF 10%	16V
C509	1-117-155-11	ELECT 33uF 20%	6.3V
C510	1-117-155-11	ELECT 33uF 20%	6.3V
C511	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C515	1-110-501-11	CERAMIC CHIP 0.33uF 10%	16V
C516	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C518	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
< CONNECTOR >			
CN100	1-779-377-11	CONNECTOR, BOARD TO BOARD 50P	
CN101	1-774-645-11	CONNECTOR, FFC/FPC 23P	
< FERRITE BEAD >			
FB100	1-543-955-11	BEAD, FERRITE (CHIP)	
FB101	1-543-955-11	BEAD, FERRITE (CHIP)	
< IC >			
IC100	8-752-372-14	IC CXD1267AN	
IC101	A-7030-755-A	CCD BLOCK ASSY (080 SERVICE)	(CCD IMAGER)(TRV7)
IC101	A-7030-765-A	CCD BLOCK ASSY (081 SERVICE)	(CCD IMAGER)(TRV7E)
IC500	8-759-080-34	IC TA75W01FU	
IC501	8-759-388-62	IC NJU7062M(Te2)	
IC502	8-759-234-77	IC TC4S66F	
IC503	8-759-234-77	IC TC4S66F	
< COIL >			
L500	1-414-754-11	INDUCTOR 10uH	

Ref. No.	Part No.	Description	Remark			
< TRANSISTOR >						
Q100	8-729-117-73	TRANSISTOR 2SC4178-F14				
< RESISTOR >						
R100	1-216-864-11	METAL CHIP	0	5%	1/16W	
R101	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R103	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R500	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R501	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R502	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R503	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R504	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R505	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R506	1-216-803-11	METAL CHIP	33	5%	1/16W	
R507	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R508	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R509	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R510	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R513	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R514	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R515	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R516	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R517	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R520	1-216-803-11	METAL CHIP	33	5%	1/16W	
< SENSOR >						
SE500	1-801-731-31	SENSOR, ANGULAR VELOCITY (43kHz)(YAW)				
SE501	1-810-725-71	SENSOR, ANGULAR VELOCITY (PITCH)				
A-7066-967-A		DD-96 BOARD, COMPLETE (TRV7E) *****				
A-7067-007-A		DD-96 BOARD, COMPLETE (TRV7) *****				
(Ref. No. 30,000 Series)						
< CAPACITOR >						
C3900	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V	
C3901	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V	
C3902	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	
C3903	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	
C3904	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V	
C3905	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	
C3906	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V	
C3907	1-113-981-11	TANTAL. CHIP	22uF	20%	20V	
C3908	1-113-981-11	TANTAL. CHIP	22uF	20%	20V	
C3909	1-164-858-11	CERAMIC CHIP	22PF	5%	16V	
C3910	1-113-981-11	TANTAL. CHIP	22uF	20%	20V	
C3911	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V	
C3912	1-113-981-11	TANTAL. CHIP	22uF	20%	20V	
C3913	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	
C3914	1-164-466-11	CERAMIC CHIP	240PF	5%	50V	
C3915	1-165-128-11	CERAMIC CHIP	0.22uF		16V	
C3916	1-113-981-11	TANTAL. CHIP	22uF	20%	20V	
C3917	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	
C3918	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C3919	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	

Ref. No.	Part No.	Description	Remark			
C3920	1-107-820-11	CERAMIC CHIP 0.1uF		16V		
C3921	1-164-858-11	CERAMIC CHIP 22PF	5%	16V		
C3922	1-165-128-11	CERAMIC CHIP 0.22uF		16V		
C3923	1-164-315-11	CERAMIC CHIP 470PF	5%	50V		
C3924	1-164-937-11	CERAMIC CHIP 0.001uF	10%	16V		
C3925	1-164-315-11	CERAMIC CHIP 470PF	5%	50V		
C3926	1-164-850-11	CERAMIC CHIP 10PF	0.5PF	16V		
C3927	1-164-850-11	CERAMIC CHIP 10PF	0.5PF	16V		
C3928	1-164-940-11	CERAMIC CHIP 0.0033uF	10%	16V		
C3929	1-164-937-11	CERAMIC CHIP 0.001uF	10%	16V		
C3930	1-115-566-11	CERAMIC CHIP 4.7uF	10%	10V		
C3931	1-164-506-11	CERAMIC CHIP 4.7uF		16V		
C3932	1-115-566-11	CERAMIC CHIP 4.7uF	10%	10V		
C3933	1-115-566-11	CERAMIC CHIP 4.7uF	10%	10V		
C3934	1-164-489-11	CERAMIC CHIP 0.22uF	10%	16V	(TRV7)	
C3935	1-164-506-11	CERAMIC CHIP 4.7uF		16V		
C3938	1-115-566-11	CERAMIC CHIP 4.7uF	10%	10V		
C3939	1-115-566-11	CERAMIC CHIP 4.7uF	10%	10V		
C3940	1-113-987-11	TANTAL. CHIP 4.7uF	20%	25V		
C3941	1-164-943-11	CERAMIC CHIP 0.01uF	10%	16V		
C3942	1-115-566-11	CERAMIC CHIP 4.7uF	10%	10V		
C3943	1-115-566-11	CERAMIC CHIP 4.7uF	10%	10V		
C3944	1-104-851-11	TANTAL. CHIP 10uF	20%	10V		
C3945	1-104-851-11	TANTAL. CHIP 10uF	20%	10V		
C3947	1-115-566-11	CERAMIC CHIP 4.7uF	10%	10V		
C3948	1-104-851-11	TANTAL. CHIP 10uF	20%	10V		
C3951	1-110-569-11	TANTAL. CHIP 47uF	20%	6.3V	(TRV7E)	
C3951	1-135-157-21	TANTALUM CHIP 10uF	20%	6.3V	(TRV7)	
C3952	1-135-216-11	TANTALUM CHIP 10uF	20%	10V		
C3953	1-135-216-11	TANTALUM CHIP 10uF	20%	10V		
C3954	1-135-216-11	TANTALUM CHIP 10uF	20%	10V		
C3955	1-135-157-21	TANTALUM CHIP 10uF	20%	6.3V		
C3956	1-135-216-11	TANTALUM CHIP 10uF	20%	10V		
C3957	1-104-851-11	TANTAL. CHIP 10uF	20%	10V		
C3958	1-135-216-11	TANTALUM CHIP 10uF	20%	10V		
C3959	1-164-941-11	CERAMIC CHIP 0.0047uF	10%	16V		
C3960	1-164-949-11	CERAMIC CHIP 0.047uF		16V		
C3964	1-135-216-11	TANTALUM CHIP 10uF	20%	10V		
C3965	1-115-156-11	CERAMIC CHIP 1uF		10V		
C3966	1-115-156-11	CERAMIC CHIP 1uF		10V		
C4100	1-164-505-11	CERAMIC CHIP 2.2uF		16V		
C4101	1-164-943-11	CERAMIC CHIP 0.01uF	10%	16V		
C4102	1-135-259-11	TANTAL. CHIP 10uF	20%	6.3V		
C4103	1-164-505-11	CERAMIC CHIP 2.2uF		16V		
C4104	1-135-211-11	TANTAL. CHIP 6.8uF	20%	6.3V		
C4105	1-110-501-11	CERAMIC CHIP 0.33uF	10%	16V		
C4106	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V		
C4107	1-107-820-11	CERAMIC CHIP 0.1uF		16V		
C4109	1-164-505-11	CERAMIC CHIP 2.2uF		16V		
C4110	1-164-505-11	CERAMIC CHIP 2.2uF		16V		
C4111	1-115-467-11	CERAMIC CHIP 0.22uF	10%	10V		
C4112	1-113-985-11	TANTAL. CHIP 10uF	20%	20V		
C4113	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V		
C4114	1-164-850-11	CERAMIC CHIP 18PF	5%	16V		
C4116	1-164-876-11	CERAMIC CHIP 120PF	5%	16V		

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C4117	1-164-937-11	CERAMIC CHIP 0.001uF 10% 16V		△ PS3900	1-533-760-21	FUSE (SMD)(1.4A/24V)(TRV7)	
C4119	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V		△ PS3901	1-533-761-21	LINK, IC (SMD)(1.4A/24V)(TRV7E)	
C4120	1-164-505-11	CERAMIC CHIP 2.2uF 16V		△ PS3901	1-533-760-21	FUSE (SMD)(1.4A/24V)(TRV7)	
C4121	1-113-986-11	TANTAL. CHIP 2.2uF 20% 25V		△ PS3902	1-533-761-21	LINK, IC (SMD)(1.4A/24V)(TRV7E)	
C4122	1-164-505-11	CERAMIC CHIP 2.2uF 16V		△ PS3902	1-533-760-21	FUSE (SMD)(1.4A/24V)(TRV7)	
C4123	1-107-820-11	CERAMIC CHIP 0.1uF 16V		△ PS3903	1-533-761-21	LINK, IC (SMD)(1.4A/24V)(TRV7E)	
C4124	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V		△ PS3903	1-533-760-21	FUSE (SMD)(1.4A/24V)(TRV7)	
C4125	1-164-505-11	CERAMIC CHIP 2.2uF 16V		△ PS3904	1-533-761-21	LINK, IC (SMD)(1.4A/24V)(TRV7E)	
C4126	1-107-820-11	CERAMIC CHIP 0.1uF 16V		△ PS3904	1-533-760-21	FUSE (SMD)(1.4A/24V)(TRV7)	
C4127	1-164-505-11	CERAMIC CHIP 2.2uF 16V		< TRANSISTOR >			
C4128	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V		Q3900	8-729-804-41	TRANSISTOR 2SB1122-S	
< CONNECTOR >				Q3901	8-729-427-46	TRANSISTOR XP4213	
CN3900	1-569-775-21	PIN, CONNECTOR 5P		Q3902	8-729-041-24	TRANSISTOR NDS355AN	
CN3901	1-779-271-11	CONNECTOR, BOARD TO BOARD 40P		Q3903	8-729-033-14	TRANSISTOR FP107-TL	
CN3902	1-750-290-31	CONNECTOR, BOARD TO BOARD 28P		Q3904	8-729-033-14	TRANSISTOR FP107-TL	
< DIODE >				Q3905	8-729-033-14	TRANSISTOR FP107-TL	
D3900	8-719-027-77	DIODE MA796		Q3906	8-729-033-14	TRANSISTOR FP107-TL	
D3903	8-719-062-16	DIODE 01ZA8.2(TPL3)		Q3907	8-729-033-14	TRANSISTOR FP107-TL	
D4100	8-719-404-49	DIODE MA111		Q3908	8-729-017-61	TRANSISTOR 2SB1581	
D4101	8-719-404-49	DIODE MA111		Q3909	8-729-425-50	TRANSISTOR 2SB1462Q	
D4102	8-719-914-43	DIODE DAN202K		Q3910	8-729-427-72	TRANSISTOR XP4501	
D4103	8-719-989-33	DIODE FC806		Q3911	8-729-037-74	TRANSISTOR UN9213J-(TX).SO	
< IC >				Q3912	8-729-427-70	TRANSISTOR XP4401	
IC3900	8-759-384-78	IC SN104241PM-TEB		Q3913	8-729-427-72	TRANSISTOR XP4501	
IC3901	8-759-398-90	IC S-81236PG-P7-T1		Q3914	8-729-425-64	TRANSISTOR 2SD2216Q	
IC3902	8-759-447-75	IC S-81322HG-KW-T1		Q3915	8-729-037-74	TRANSISTOR UN9213J-(TX).SO	
IC4100	8-759-521-35	IC TL5001CD		Q3916	8-729-427-16	TRANSISTOR XP4113	
< COIL >				Q3917	8-729-041-23	TRANSISTOR NDS356AP	
L3900	1-409-529-41	COIL, CHOKE 10uH		Q3918	8-729-041-23	TRANSISTOR NDS356AP	
L3901	1-409-529-41	COIL, CHOKE 10uH		Q3920	8-729-041-24	TRANSISTOR NDS355AN	
L3902	1-409-529-41	COIL, CHOKE 10uH		Q3921	8-729-041-24	TRANSISTOR NDS355AN	
L3903	1-414-406-11	INDUCTOR 220uH		Q3922	8-729-106-60	TRANSISTOR 2SB1115A	
L3904	1-424-674-11	COIL, CHOKE 22uH		Q4102	8-729-037-53	TRANSISTOR 2SB1462J-QR(TX).SO	
L3905	1-409-532-41	COIL, CHOKE 33uH		Q4103	8-729-037-74	TRANSISTOR UN9213J-(TX).SO	
L3906	1-409-532-41	COIL, CHOKE 33uH		Q4104	8-729-037-74	TRANSISTOR UN9213J-(TX).SO	
L3907	1-409-532-41	COIL, CHOKE 33uH		Q4105	8-729-041-23	TRANSISTOR NDS356AP	
L3908	1-424-674-11	COIL, CHOKE 22uH		Q4106	8-729-037-52	TRANSISTOR 2SD2216J-QR(TX).SO	
L3910	1-414-430-11	INDUCTOR 4.7uH		Q4107	8-729-804-41	TRANSISTOR 2SB1122-S	
L3914	1-414-396-21	INDUCTOR 4.7uH		Q4111	8-729-037-52	TRANSISTOR 2SD2216J-QR(TX).SO	
L3915	1-414-396-21	INDUCTOR 4.7uH		Q4112	8-729-037-53	TRANSISTOR 2SB1462J-QR(TX).SO	
L3916	1-414-396-21	INDUCTOR 4.7uH		Q4113	8-729-037-52	TRANSISTOR 2SD2216J-QR(TX).SO	
L3917	1-414-396-21	INDUCTOR 4.7uH		< RESISTOR >			
L3918	1-414-396-21	INDUCTOR 4.7uH		R3900	1-218-974-11	METAL GLAZE 56K 5% 1/16W	
L3919	1-414-404-11	INDUCTOR 100uH		R3901	1-218-971-11	METAL GLAZE 33K 5% 1/16W	
L3920	1-414-400-11	INDUCTOR 22uH		R3903	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
L3921	1-414-400-11	INDUCTOR 22uH		R3904	1-218-990-11	CONDUCTOR, CHIP (1005)	
L4100	1-412-746-11	INDUCTOR CHIP 10uH		R3905	1-218-969-11	METAL GLAZE 22K 5% 1/16W	
L4101	1-412-064-11	INDUCTOR CHIP 100uH		R3906	1-218-965-11	METAL GLAZE 10K 5% 1/16W	
L4102	1-412-064-11	INDUCTOR CHIP 100uH		R3907	1-208-683-11	METAL GLAZE 1K 0.50% 1/16W	
L4103	1-412-064-11	INDUCTOR CHIP 100uH		R3908	1-218-945-11	METAL GLAZE 220 0.50% 1/16W	
< IC LINK >				R3909	1-208-711-11	METAL GLAZE 15K 0.50% 1/16W	
△ PS3900	1-533-761-21	LINK, IC (SMD)(1.4A/24V)(TRV7E)		R3910	1-208-713-11	METAL GLAZE 18K 0.50% 1/16W	
				R3911	1-218-967-11	METAL GLAZE 15K 5% 1/16W	
				R3912	1-218-959-11	METAL GLAZE 3.3K 5% 1/16W	
				R3913	1-208-715-11	METAL GLAZE 22K 0.50% 1/16W	
				R3914	1-218-969-11	METAL GLAZE 22K 5% 1/16W	

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Ref. No.	Part No.	Description	Remark		
R3915	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W
R3916	1-218-961-11	METAL GLAZE	4.7K	5%	1/16W
R3917	1-208-713-11	METAL GLAZE	18K	0.50%	1/16W
R3918	1-208-927-11	METAL GLAZE	47K	0.50%	1/16W
R3919	1-218-962-11	METAL GLAZE	5.6K	5%	1/16W
R3920	1-208-907-81	METAL GLAZE	6.8K	0.50%	1/16W
R3921	1-218-965-11	METAL GLAZE	10K	5%	1/16W
R3922	1-218-959-11	METAL GLAZE	3.3K	5%	1/16W
R3923	1-208-713-11	METAL GLAZE	18K	0.50%	1/16W
R3924	1-218-975-11	METAL GLAZE	68K	5%	1/16W
R3925	1-208-907-81	METAL GLAZE	6.8K	0.50%	1/16W
R3926	1-218-967-11	METAL GLAZE	15K	5%	1/16W
R3927	1-208-713-11	METAL GLAZE	18K	0.50%	1/16W
R3928	1-208-715-11	METAL GLAZE	22K	0.50%	1/16W
R3929	1-208-691-11	METAL GLAZE	2.2K	0.50%	1/16W
R3930	1-208-713-11	METAL GLAZE	18K	0.50%	1/16W
R3931	1-208-713-11	METAL GLAZE	18K	0.50%	1/16W
R3932	1-208-939-11	METAL GLAZE	150K	0.50%	1/16W
R3933	1-218-945-11	METAL GLAZE	220	0.50%	1/16W
R3934	1-208-713-11	METAL GLAZE	18K	0.50%	1/16W
R3935	1-208-885-11	METAL GLAZE	820	0.50%	1/16W
R3936	1-218-965-11	METAL GLAZE	10K	5%	1/16W
R3937	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R3938	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R3939	1-218-989-11	METAL GLAZE	1M	5%	1/16W
R3940	1-218-990-11	CONDUCTOR, CHIP (1005)			
R3941	1-208-719-11	METAL GLAZE	33K	0.50%	1/16W
R3942	1-208-910-11	METAL GLAZE	9.1K	0.50%	1/16W
R3943	1-208-713-11	METAL GLAZE	18K	0.50%	1/16W
R3944	1-208-707-11	METAL GLAZE	10K	0.50%	1/16W
R3945	1-218-878-11	METAL GLAZE	20K	0.50%	1/16W
R3946	1-218-973-11	METAL GLAZE	47K	5%	1/16W
R3947	1-218-951-11	METAL GLAZE	680	5%	1/16W
R3948	1-218-965-11	METAL GLAZE	10K	5%	1/16W
R3949	1-218-969-11	METAL GLAZE	22K	5%	1/16W
R3950	1-218-973-11	METAL GLAZE	47K	5%	1/16W
R3951	1-208-719-11	METAL GLAZE	33K	0.50%	1/16W
R3952	1-208-715-11	METAL GLAZE	22K	0.50%	1/16W
R3953	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R3954	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R3955	1-218-965-11	METAL GLAZE	10K	5%	1/16W
R3956	1-218-974-11	METAL GLAZE	56K	0.50%	1/16W
R3957	1-208-715-11	METAL GLAZE	22K	0.50%	1/16W
R3958	1-218-877-11	METAL GLAZE	18K	0.50%	1/16W
R3959	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R3960	1-218-989-11	METAL GLAZE	1M	5%	1/16W
R3961	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R3962	1-218-989-11	METAL GLAZE	1M	5%	1/16W
R3963	1-218-990-11	CONDUCTOR, CHIP (1005)			
R3964	1-218-989-11	METAL GLAZE	1M	5%	1/16W
R3967	1-218-973-11	METAL GLAZE	47K	5%	1/16W
R3968	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R3969	1-218-935-11	METAL GLAZE	33	5%	1/16W
R3970	1-218-935-11	METAL GLAZE	33	5%	1/16W
R3971	1-218-946-11	METAL GLAZE	270	5%	1/16W
R4101	1-218-981-11	METAL GLAZE	220K	5%	1/16W
R4102	1-208-715-11	METAL GLAZE	22K	0.50%	1/16W

Ref. No.	Part No.	Description	Remark		
R4103	1-218-978-11	METAL GLAZE	120K	0.50%	1/16W
R4104	1-208-711-11	METAL GLAZE	15K	0.50%	1/16W
R4105	1-218-961-11	METAL GLAZE	4.7K	5%	1/16W
R4106	1-218-958-11	METAL GLAZE	2.7K	0.50%	1/16W
R4107	1-218-964-11	METAL GLAZE	8.2K	5%	1/16W
R4108	1-208-719-11	METAL GLAZE	33K	0.50%	1/16W
R4109	1-218-970-11	METAL GLAZE	27K	0.50%	1/16W
R4110	1-218-972-11	METAL GLAZE	39K	5%	1/16W
R4111	1-218-967-11	METAL GLAZE	15K	5%	1/16W
R4112	1-218-981-11	METAL GLAZE	220K	5%	1/16W
R4113	1-218-970-11	METAL GLAZE	27K	5%	1/16W
R4114	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R4115	1-218-951-11	METAL GLAZE	680	5%	1/16W
R4116	1-218-969-11	METAL GLAZE	22K	5%	1/16W
R4117	1-218-951-11	METAL GLAZE	680	5%	1/16W
R4119	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R4123	1-218-990-11	CONDUCTOR, CHIP (1005)			
R4127	1-218-975-11	METAL GLAZE	68K	5%	1/16W
R4128	1-218-973-11	METAL GLAZE	47K	5%	1/16W
R4130	1-218-973-11	METAL GLAZE	47K	5%	1/16W
R4132	1-218-978-11	METAL GLAZE	120K	0.50%	1/16W
R4133	1-218-958-11	METAL GLAZE	2.7K	0.50%	1/16W
R4134	1-208-721-11	METAL GLAZE	39K	0.50%	1/16W
R4135	1-218-990-11	CONDUCTOR, CHIP (1005)			
R4136	1-218-984-11	METAL GLAZE	390K	5%	1/16W

< TRANSFORMER >

△ T3900	1-429-565-21	TRANSFORMER, CONVERTER
△ T4100	1-431-256-21	TRANSFORMER, CONVERTER

A-7073-062-A FC-62 BOARD, COMPLETE

(Ref. No. 40,000 Series)

< CONNECTOR >

CN9801	1-766-335-21	CONNECTOR, FFC/FPC 5P
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< RESISTOR >

R9801	1-216-838-11	METAL CHIP	27K	5%	1/16W
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< SWITCH >

S9801	1-762-651-11	SWITCH, SLIDE (FOCUS)
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FP-242 BOARD (Ref. No. 1,000 Series)

3-748-761-01	HOLDER (S), SENSOR
3-748-762-01	HOLDER (T), SENSOR

< DIODE >

D901	8-719-050-98	DIODE LN57.S0
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< HALL ELEMENT >

H901	8-719-033-37	ELEMENT, HALL HW-105C
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FP-242

FP-243

FP-347

HL-8

IK-1

JK-156

Ref. No.	Part No.	Description	Remark		
< RESISTOR >					
R901	1-216-807-11	METAL CHIP	68	5%	1/16W
R902	1-216-807-11	METAL CHIP	68	5%	1/16W
R903	1-216-807-11	METAL CHIP	68	5%	1/16W
R904	1-216-807-11	METAL CHIP	68	5%	1/16W
FP-243 BOARD (Ref. No. 1,000 Series)					

	3-748-763-01	HOLDER, FPC			
< CONNECTOR >					
CN901	1-770-312-11	CONNECTOR 4P			
< HALL ELEMENT >					
H902	8-719-061-28	ELEMENT, HALL HW-105C-FT-V			
< TRANSISTOR >					
Q901	8-729-028-71	TRANSISTOR	PN166.SO		
Q902	8-729-028-71	TRANSISTOR	PN166.SO		
< SWITCH >					
S901	1-762-351-11	SWITCH, PUSH (1 KEY)(REC PROOF)			
1-657-756-11 FP-347 FLEXIBLE BOARD					

A-7073-064-A HL-8 BOARD, COMPLETE					

(Ref. No. 40,000 Series)					
< CAPACITOR >					
C8201	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C8203	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
< CONNECTOR >					
CN8201	1-766-346-21	CONNECTOR, FFC/FPC 16P			
CN8202	1-778-506-21	PIN, CONNECTOR (PC BOARD) 2P			
CN8203	1-774-631-21	CONNECTOR, FFC/FPC 6P			
CN8204	1-766-335-21	CONNECTOR, FFC/FPC 5P			
< DIODE >					
D8201	8-719-062-16	DIODE	01ZA8.2(TPL3)		
< FERRITE BEAD >					
FB8201	1-500-113-11	BEAD, FERRITE (CHIP)			
FB8202	1-500-113-11	BEAD, FERRITE (CHIP)			
FB8203	1-500-113-11	BEAD, FERRITE (CHIP)			
FB8204	1-550-907-21	BEAD, FERRITE (CHIP)			
FB8205	1-550-907-21	BEAD, FERRITE (CHIP)			
FB8206	1-550-907-21	BEAD, FERRITE (CHIP)			

Ref. No.	Part No.	Description	Remark			
< JACK >						
J8201	1-565-276-21	JACK, ULTRA SMALL 1P (LANC)				
J8202	1-695-514-21	JACK (SMALL TYPE) 1P (2)				
< COIL >						
L8201	1-216-295-91	CONDUCTOR, CHIP (2012)				
L8202	1-216-295-91	CONDUCTOR, CHIP (2012)				
< RESISTOR >						
R8201	1-216-864-11	METAL CHIP	0	5%	1/16W	
A-7073-060-A IK-1 BOARD, COMPLETE						

(Ref. No. 40,000 Series)						
< CONNECTOR >						
CN3001	1-766-335-21	CONNECTOR, FFC/FPC 5P				
CN3002	1-774-928-21	CONNECTOR, FFC/FPC 27P				
CN3003	1-774-928-21	CONNECTOR, FFC/FPC 27P				
CN3004	1-778-506-21	PIN, CONNECTOR (PC BOARD) 2P				
< RESISTOR >						
R3001	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R3002	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R3003	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R3004	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R3005	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R3006	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R3008	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R3009	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
< SWITCH >						
S3001	1-771-106-11	SWITCH, TACTILE (MENU)				
S3002	1-692-605-11	SWITCH, SLIDE (START/STOP MODE)				
S3003	1-771-106-11	SWITCH, TACTILE (TITLE)				
S3004	1-771-106-11	SWITCH, TACTILE (END SEARCH)				
S3005	1-771-106-11	SWITCH, TACTILE (DATA CODE)				
S3006	1-771-106-11	SWITCH, TACTILE (DISPLAY)				
S3007	1-771-106-11	SWITCH, TACTILE (16:9 WIDE)				
A-7073-061-A JK-156 BOARD, COMPLETE						

(Ref. No. 30,000 Series)						
< CAPACITOR >						
C9981	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V	
C9983	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V	
< CONNECTOR >						
* CN9981	1-764-521-11	CONNECTOR, FFC/FPC (ZIF) 12P				
CN9982	1-779-369-11	CONNECTOR, SQUARE TYPE (INDI) 4P				
(DV IN OUT)(TRV7/TRV7E:E,Tourist)						
(DV OUT)(TRV7E:AEP,UK)						

Ref. No.	Part No.	Description	Remark
< DIODE >			
D9981	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D9982	8-719-062-16	DIODE 01ZA8.2(TPL3)	
< JACK >			
J9982	1-778-040-11	JACK, SMALL TYPE (AUDIO/VIDEO OUT)	
< COIL >			
L9981	1-550-907-21	BEAD, FERRITE (CHIP)	
L9982	1-550-907-21	BEAD, FERRITE (CHIP)	
*	1-665-517-11	LI-1 BOARD (Ref. No. 60,000 Series) *****	
< BATTERY >			
△ BT9831	1-528-694-11	BATTERY, V/L RICHARGEABL	
< CONNECTOR >			
CN9831	1-778-506-21	PIN, CONNECTOR (PC BOARD) 2P	
A-7073-067-A		MA-301 BOARD, COMPLETE ***** (Ref. No. 50,000 Series)	
< CAPACITOR >			
C7003	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C7004	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C7005	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C7006	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C7007	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C7008	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C7009	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C7010	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C7011	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C7012	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C7013	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C7014	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C7015	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C7016	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C7017	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C7018	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C7019	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C7020	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C7021	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C7022	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C7023	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C7024	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C7025	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C7026	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C7027	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C7028	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C7029	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C7030	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C7031	1-164-677-11	CERAMIC CHIP 0.033uF 10% 16V	
C7032	1-164-677-11	CERAMIC CHIP 0.033uF 10% 16V	

Ref. No.	Part No.	Description	Remark
C7033	1-164-677-11	CERAMIC CHIP 0.033uF 10% 16V	
C7034	1-164-677-11	CERAMIC CHIP 0.033uF 10% 16V	
C7035	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C7036	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C7037	1-164-245-11	CERAMIC CHIP 0.015uF 10% 25V	
C7038	1-164-245-11	CERAMIC CHIP 0.015uF 10% 25V	
C7039	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C7040	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C7041	1-115-156-11	CERAMIC CHIP 1uF 10V	
C7042	1-115-156-11	CERAMIC CHIP 1uF 10V	
C7043	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C7047	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C8601	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C8603	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C8605	1-104-913-11	TANTAL. CHIP 10uF 20% 16V	
C8651	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
< CONNECTOR >			
CN7001	1-766-629-11	CONNECTOR, FFC/FPC 18P	
CN7002	1-580-055-21	PIN, CONNECTOR 2P	
CN7003	1-580-055-21	PIN, CONNECTOR 2P	
CN7004	1-764-516-21	CONNECTOR, FFC/FPC (ZIF) 6P	
CN7005	1-750-333-11	CONNECTOR, FFC/FPC (ZIF) 6P	
< DIODE >			
D7002	8-719-404-49	DIODE MA111	
D7003	8-719-045-87	DIODE MA4Z082WA-(TXD).SO	
D7004	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D8602	8-719-061-86	DIODE DCR2810	
D8603	8-749-060-65	DIODE DCC3810	
D8651	8-719-061-82	DIODE TLSU1002(TPX1,SONY)	
< IC >			
IC7001	8-759-248-31	IC BA7780KV-E2	
IC8651	8-749-012-83	IC RS-180-T	
< TRANSISTOR >			
Q8601	8-729-037-72	TRANSISTOR UN9211J-(TX).SO	
Q8603	8-729-122-63	TRANSISTOR 2SA1226	
Q8604	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q8605	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q8606	8-729-425-50	TRANSISTOR 2SB1462Q	
Q8651	8-729-037-72	TRANSISTOR UN9211J-(TX).SO	
< RESISTOR >			
R7001	1-500-113-11	BEAD, FERRITE (CHIP)	
R7002	1-500-113-11	BEAD, FERRITE (CHIP)	
R7003	1-500-113-11	BEAD, FERRITE (CHIP)	
R7006	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R7007	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R7008	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R7009	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R7010	1-216-864-11	METAL CHIP 0 5% 1/16W	
R7011	1-216-864-11	METAL CHIP 0 5% 1/16W	
R7012	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

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Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
R7013	1-216-825-11	METAL CHIP	2.2K	5%	1/16W		C5512	1-113-682-11	TANTAL. CHIP	33uF	20%	10V	
R7014	1-216-831-11	METAL CHIP	6.8K	5%	1/16W		C5513	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
R7015	1-216-831-11	METAL CHIP	6.8K	5%	1/16W		C5514	1-104-912-11	TANTAL. CHIP	3.3uF	20%	6.3V	
R7016	1-216-821-11	METAL CHIP	1K	5%	1/16W								
R7017	1-216-821-11	METAL CHIP	1K	5%	1/16W		C5524	1-113-987-11	TANTAL. CHIP	4.7uF	20%	25V	
							C5525	1-104-329-11	CERAMIC CHIP	0.1uF	10%	50V	
R7018	1-216-830-11	METAL CHIP	5.6K	5%	1/16W		C5526	1-104-329-11	CERAMIC CHIP	0.1uF	10%	50V	
R7019	1-216-831-11	METAL CHIP	6.8K	5%	1/16W		C5527	1-104-329-11	CERAMIC CHIP	0.1uF	10%	50V	
R7020	1-216-833-11	METAL CHIP	10K	5%	1/16W		C5528	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
R7021	1-216-830-11	METAL CHIP	5.6K	5%	1/16W								
R7022	1-216-827-11	METAL CHIP	3.3K	5%	1/16W		C5529	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
							C5530	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
R7023	1-216-864-11	METAL CHIP	0	5%	1/16W		C5701	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
R7024	1-216-831-11	METAL CHIP	6.8K	5%	1/16W		C5702	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
R7025	1-216-833-11	METAL CHIP	10K	5%	1/16W		C5706	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
R7026	1-216-837-11	METAL CHIP	22K	5%	1/16W								
R7027	1-216-864-11	METAL CHIP	0	5%	1/16W		C5707	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
							C5710	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
R7028	1-216-827-11	METAL CHIP	3.3K	5%	1/16W		C5712	1-162-926-11	CERAMIC CHIP	82PF	5%	50V	
R7029	1-216-837-11	METAL CHIP	22K	5%	1/16W		C5714	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
R7030	1-216-839-11	METAL CHIP	33K	5%	1/16W		C5715	1-164-363-11	CERAMIC CHIP	560PF	5%	50V	
R7031	1-216-839-11	METAL CHIP	33K	5%	1/16W								
R7032	1-216-835-11	METAL CHIP	15K	5%	1/16W		C5719	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
							C5723	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
R7033	1-216-835-11	METAL CHIP	15K	5%	1/16W		C5724	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
R7034	1-216-835-11	METAL CHIP	15K	5%	1/16W		C5725	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
R7035	1-216-835-11	METAL CHIP	15K	5%	1/16W		C5726	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
R7036	1-216-830-11	METAL CHIP	5.6K	5%	1/16W								
R7038	1-216-818-11	METAL CHIP	560	5%	1/16W		C5752	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
							C5754	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V	
R7039	1-216-832-11	METAL CHIP	8.2K	5%	1/16W		C5757	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
R7040	1-216-839-11	METAL CHIP	33K	5%	1/16W		C5759	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
R7041	1-216-834-11	METAL CHIP	12K	5%	1/16W		C5901	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
R7043	1-216-839-11	METAL CHIP	33K	5%	1/16W								
R7044	1-216-841-11	METAL CHIP	47K	5%	1/16W		C5902	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V	
							C5903	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V	
R7045	1-216-841-11	METAL CHIP	47K	5%	1/16W		C5904	1-164-346-11	CERAMIC CHIP	1uF		16V	
R7046	1-216-821-11	METAL CHIP	1K	5%	1/16W		C5905	1-162-918-11	CERAMIC CHIP	18PF	5%	50V	
R7047	1-216-821-11	METAL CHIP	1K	5%	1/16W		C5906	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	
R8601	1-216-311-00	METAL CHIP	6.8	5%	1/10W								
R8602	1-216-821-11	METAL CHIP	1K	5%	1/16W		C5907	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
							C5908	1-162-920-11	CERAMIC CHIP	27PF	5%	50V	
R8603	1-216-841-11	METAL CHIP	47K	5%	1/16W		C5910	1-104-911-11	TANTAL. CHIP	33uF	20%	10V	
R8607	1-216-817-11	METAL CHIP	470	5%	1/16W		C5911	1-164-346-11	CERAMIC CHIP	1uF		16V	
R8608	1-216-001-00	METAL CHIP	10	5%	1/10W		C5912	1-164-664-11	CERAMIC CHIP	0.033uF	10%	50V	
R8609	1-216-609-11	METAL CHIP	18	0.5%	1/10W								
R8651	1-216-823-11	METAL CHIP	1.5K	5%	1/16W		C5913	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
							△C5915	1-113-521-11	CERAMIC CHIP	12PF	10%	3KV	
R8652	1-216-805-11	METAL CHIP	47	5%	1/16W		< CONNECTOR >						
							CN5701	1-573-366-21	CONNECTOR, FFC/FPC 26P				
							CN5901	1-764-709-11	CONNECTOR, FFC/FPC (LIF) 10P				
							CN5950	1-573-364-11	CONNECTOR, FFC/FPC 24P				
							< DIODE >						
							D5701	8-713-102-80	DIODE 1T369-01-T8A				
							D5702	8-713-102-80	DIODE 1T369-01-T8A				
							D5705	8-719-404-49	DIODE MA111				
							D5902	8-719-404-49	DIODE MA111				
							D5904	8-719-404-49	DIODE MA111				
							D5950	8-719-420-14	DIODE MA8082-M				
							< IC >						
							IC5501	8-759-364-05	IC M62376GP-65AD				
							IC5502	8-752-070-03	IC CXA1785AR-T4				

A-7066-968-A PD-85 BOARD, COMPLETE (TRV7)

A-7066-992-A PD-85P BOARD, COMPLETE (TRV7E)

(Ref. No. 30,000 Series)

< CAPACITOR >

C5501	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5502	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5504	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C5506	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C5507	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5508	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5509	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V

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Ref. No.	Part No.	Description	Remark
IC5701	8-759-443-40	IC CM7013L2-T4	
IC5702	8-759-359-49	IC NJM3414AV(TE2)	
IC5703	8-759-058-58	IC TC7S04FU(TE85R)	
IC5901	8-759-521-35	IC TL5001CD	
IC5902	8-759-075-70	IC TA75S393F	
< COIL >			
L5503	1-414-402-11	INDUCTOR 47uH	
L5504	1-414-078-11	INDUCTOR 10uH	
L5701	1-414-078-11	INDUCTOR 10uH	
L5702	1-543-960-21	BEAD, FERRITE (CHIP)	
L5703	1-543-960-21	BEAD, FERRITE (CHIP)	
L5704	1-412-951-11	INDUCTOR 10uH	
L5901	1-412-028-11	INDUCTOR CHIP 4.7uH	
L5902	1-424-674-11	COIL, CHOKE 22uH	
L5903	1-409-536-41	COIL, CHOKE 150uH	
< TRANSISTOR >			
Q5501	8-729-425-64	TRANSISTOR 2SD2216Q	
Q5502	8-729-425-50	TRANSISTOR 2SB1462Q	
Q5503	8-729-037-75	TRANSISTOR UN9214J-(TX).SO	
Q5703	8-729-041-23	TRANSISTOR NDS356AP	
Q5704	8-729-037-58	TRANSISTOR UN9110J-(TX).SO	
Q5901	8-729-037-75	TRANSISTOR UN9214J-(TX).SO	
Q5902	8-729-037-60	TRANSISTOR UN9112J-(TX).SO	
Q5903	8-729-037-74	TRANSISTOR UN9213J-(TXD).SO	
Q5904	8-729-425-64	TRANSISTOR 2SD2216Q	
Q5905	8-729-429-18	TRANSISTOR UN9213	
Q5906	8-729-823-84	TRANSISTOR FP102	
Q5907	8-729-425-64	TRANSISTOR 2SD2216Q	
Q5908	8-729-425-64	TRANSISTOR 2SD2216Q	
Q5909	8-729-429-18	TRANSISTOR UN9213	
Q5910	8-729-039-43	TRANSISTOR FP216-TL	
Q5911	8-729-429-18	TRANSISTOR UN9213	
Q5912	8-729-037-60	TRANSISTOR UN9112J-(TX).SO	
< RESISTOR >			
R5501	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R5502	1-216-864-11	METAL CHIP 0 5% 1/16W	
R5503	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R5504	1-216-817-11	METAL CHIP 470 5% 1/16W	
R5505	1-216-842-11	METAL CHIP 56K 5% 1/16W	
R5506	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R5507	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R5508	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R5509	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R5510	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R5511	1-216-842-11	METAL CHIP 56K 5% 1/16W	
R5512	1-218-877-11	METAL GLAZE 18K 0.50% 1/16W	
R5513	1-216-851-11	METAL CHIP 330K 5% 1/16W	
R5514	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R5515	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R5516	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R5521	1-216-864-11	METAL CHIP 0 5% 1/16W	
R5525	1-216-864-11	METAL CHIP 0 5% 1/16W	
R5527	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R5528	1-216-840-11	METAL CHIP 39K 5% 1/16W	

Ref. No.	Part No.	Description	Remark
R5529	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R5530	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R5531	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R5532	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R5533	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R5534	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R5535	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R5536	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R5537	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R5538	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R5539	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R5540	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R5541	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R5542	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R5543	1-216-805-11	METAL CHIP 47 5% 1/16W	
R5544	1-216-805-11	METAL CHIP 47 5% 1/16W	
R5545	1-216-805-11	METAL CHIP 47 5% 1/16W	
R5549	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R5550	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R5701	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R5702	1-216-864-11	METAL CHIP 0 5% 1/16W	
R5704	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R5707	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R5709	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R5710	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R5711	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R5712	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R5713	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R5714	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R5715	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R5716	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R5719	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R5720	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R5721	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R5723	1-216-864-11	METAL CHIP 0 5% 1/16W	
R5724	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R5725	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R5728	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R5729	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R5730	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R5731	1-216-864-11	METAL CHIP 0 5% 1/16W	
R5732	1-216-864-11	METAL CHIP 0 5% 1/16W	
R5733	1-216-864-11	METAL CHIP 0 5% 1/16W	
R5751	1-216-864-11	METAL CHIP 0 5% 1/16W	
R5752	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R5753	1-216-864-11	METAL CHIP 0 5% 1/16W	
R5756	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R5757	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R5760	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R5763	1-216-864-11	METAL CHIP 0 5% 1/16W	
R5764	1-216-864-11	METAL CHIP 0 5% 1/16W	
R5901	1-216-864-11	METAL CHIP 0 5% 1/16W	
R5902	1-218-867-11	METAL GLAZE 6.8K 0.50% 1/16W	
R5903	1-218-881-11	METAL GLAZE 27K 0.50% 1/16W	
R5904	1-218-897-11	METAL GLAZE 120K 0.50% 1/16W	
R5905	1-216-818-11	METAL CHIP 560 5% 1/16W	
R5906	1-216-837-11	METAL CHIP 22K 5% 1/16W	

Ref. No.	Part No.	Description	Remark				Ref. No.	Part No.	Description	Remark			
R5907	1-216-818-11	METAL CHIP	560	5%	1/16W		C1911	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
R5908	1-218-867-11	METAL GLAZE	6.8K	0.50%	1/16W		C1912	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	
R5909	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		C1913	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	
							C1914	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	
R5910	1-218-853-11	METAL GLAZE	1.8K	0.50%	1/16W		C1915	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
R5911	1-218-859-11	METAL GLAZE	3.3K	0.50%	1/16W								
R5912	1-216-823-11	METAL CHIP	1.5K	5%	1/16W		C1916	1-164-505-11	CERAMIC CHIP	2.2uF		16V	
R5913	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		C1917	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
R5914	1-216-841-11	METAL CHIP	47K	5%	1/16W		C2111	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	
							C2112	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	
R5915	1-216-823-11	METAL CHIP	1.5K	5%	1/16W		C2700	1-164-947-11	CERAMIC CHIP	0.01uF		16V	
R5916	1-216-833-11	METAL CHIP	10K	5%	1/16W								
R5917	1-216-055-00	METAL CHIP	1.8K	5%	1/10W		C2701	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
R5918	1-216-055-00	METAL CHIP	1.8K	5%	1/10W		C2702	1-164-947-11	CERAMIC CHIP	0.01uF		16V	
R5919	1-216-845-11	METAL CHIP	100K	5%	1/16W		C2703	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
							C2704	1-164-947-11	CERAMIC CHIP	0.01uF		16V	
R5920	1-216-833-11	METAL CHIP	10K	5%	1/16W		C2708	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V	
R5921	1-216-837-11	METAL CHIP	22K	5%	1/16W								
R5922	1-216-817-11	METAL CHIP	470	5%	1/16W		C2709	1-164-848-11	CERAMIC CHIP	8PF	0.5PF	16V	
R5923	1-216-810-11	METAL CHIP	120	5%	1/16W		C2712	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
R5950	1-216-826-11	METAL CHIP	2.7K	5%	1/16W		C2713	1-164-947-11	CERAMIC CHIP	0.01uF		16V	
							C2714	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V	
R5951	1-216-828-11	METAL CHIP	3.9K	5%	1/16W		C2715	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V	
R5952	1-216-832-11	METAL CHIP	8.2K	5%	1/16W								
R5953	1-216-838-11	METAL CHIP	27K	5%	1/16W		C2718	1-164-947-11	CERAMIC CHIP	0.01uF		16V	
		< SWITCH >					C2720	1-164-947-11	CERAMIC CHIP	0.01uF		16V	
S5950	1-572-473-11	SWITCH, TACTIL (LCD BRIGHT +)					C2721	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
S5951	1-572-473-11	SWITCH, TACTIL (LCD BRIGHT -)					C2724	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	
S5952	1-572-473-11	SWITCH, TACTIL (VOLUME +)					C2725	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
S5953	1-572-473-11	SWITCH, TACTIL (VOLUME -)											
S5954	1-572-467-71	SWITCH, PUSH (1 KEY)(PANEL MIRROR)					C2726	1-107-820-11	CERAMIC CHIP	0.1uF		16V	
		< TRANSFORMER >					C2727	1-107-820-11	CERAMIC CHIP	0.1uF		16V	
△ T5901	1-429-507-31	TRANSFORMER, INVERTER					C2728	1-107-820-11	CERAMIC CHIP	0.1uF		16V	
							C2731	1-107-820-11	CERAMIC CHIP	0.1uF		16V	
							C2732	1-164-866-11	CERAMIC CHIP	47PF	5%	16V	
							C2733	1-164-848-11	CERAMIC CHIP	8PF	0.5PF	16V	
							C2735	1-164-947-11	CERAMIC CHIP	0.01uF		16V	
							C2736	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V	
							C2737	1-164-866-11	CERAMIC CHIP	47PF	5%	16V	
							C2738	1-164-866-11	CERAMIC CHIP	47PF	5%	16V	
							C2744	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
							C2745	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
							C2747	1-164-947-11	CERAMIC CHIP	0.01uF		16V	
							C2749	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
							C2750	1-164-947-11	CERAMIC CHIP	0.01uF		16V	
							C2751	1-164-947-11	CERAMIC CHIP	0.01uF		16V	
							C2752	1-164-874-11	CERAMIC CHIP	100PF	5%	16V	
							C2753	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
							C2754	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
							C2755	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
							C2757	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
							C2758	1-164-947-11	CERAMIC CHIP	0.01uF		16V	
							C2759	1-164-878-11	CERAMIC CHIP	150PF	5%	16V	
							C2763	1-164-878-11	CERAMIC CHIP	150PF	5%	16V	
							C2769	1-107-820-11	CERAMIC CHIP	0.1uF		16V	
							C2770	1-107-820-11	CERAMIC CHIP	0.1uF		16V	
							C2771	1-107-820-11	CERAMIC CHIP	0.1uF		16V	
							C2772	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
							C2773	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
							C2774	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
							C2799	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
							C3100	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V	
							C3101	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	

A-7066-966-A RJ-74 BOARD, COMPLETE

(Ref. No. 20,000 Series)

< CAPACITOR >

C1600	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1601	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1602	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C1603	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C1604	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1605	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1700	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1703	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1704	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1900	1-111-253-11	TANTAL. CHIP	100uF	20%	6.3V
C1901	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1902	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1903	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1904	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1905	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C1906	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C1907	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C1908	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1909	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C1910	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark		
C3102	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C3103	1-109-935-11	TANTAL. CHIP	4.7uF	20%	6.3V
C3104	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C3105	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3106	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3107	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3108	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C3109	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3110	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3111	1-164-862-11	CERAMIC CHIP	33PF	5%	16V
C3112	1-164-862-11	CERAMIC CHIP	33PF	5%	16V
C3113	1-164-862-11	CERAMIC CHIP	33PF	5%	16V
C3114	1-164-363-11	CERAMIC CHIP	560PF	5%	50V
C3115	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C3116	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C3117	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3118	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C3119	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3120	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3121	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3123	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3125	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3126	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C3127	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C3128	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3129	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3130	1-164-934-11	CERAMIC CHIP	330PF	10%	16V
C3131	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3132	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C3133	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3134	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3135	1-107-687-11	TANTAL. CHIP	3.3uF	20%	20V
C3136	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C3137	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3138	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C3139	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3140	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3141	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3142	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C3143	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3144	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3145	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3146	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3147	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3148	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3149	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3150	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3152	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3153	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C3154	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C3155	1-109-935-11	TANTAL. CHIP	4.7uF	20%	6.3V
C3157	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3158	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3159	1-164-866-11	CERAMIC CHIP	47PF	5%	16V
C3500	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C3501	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C3504	1-107-820-11	CERAMIC CHIP	0.1uF		16V

Ref. No.	Part No.	Description	Remark		
C3506	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C3512	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C3514	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C3520	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C3521	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C3527	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C3528	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C3529	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C3530	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C3531	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C6100	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C6101	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C6102	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C6103	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C6104	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C6105	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C6106	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C6107	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C6108	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C7901	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7902	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7903	1-164-852-11	CERAMIC CHIP	12PF	5%	16V
C7904	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C7905	1-109-935-11	TANTAL. CHIP	4.7uF	20%	6.3V
C7906	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7907	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C7908	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C7909	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C7910	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C7911	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C7912	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C7915	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C7916	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7917	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C7918	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
< CONNECTOR >					
CN2708	1-573-350-11	CONNECTOR, FFC/FPC 10P			
CN3100	1-766-654-21	CONNECTOR, FFC/FPC 18P			
CN3101	1-573-346-21	CONNECTOR, FFC/FPC 6P			
* CN3102	1-573-356-11	CONNECTOR, FFC/FPC 16P			
CN3103	1-573-351-11	CONNECTOR, FFC/FPC 11P			
CN3104	1-691-483-21	CONNECTOR, FFC/FPC 4P			
CN3105	1-573-346-21	CONNECTOR, FFC/FPC 6P			
CN9901	1-778-076-11	CONNECTOR, BOARD TP BOARD 80P			
CN9902	1-750-303-41	CONNECTOR, BOARD TO BOARD 20P			
CN9903	1-750-307-31	CONNECTOR, BOARD TO BOARD 28P			
< DIODE >					
D1900	8-719-055-86	DIODE KV1470TL1-3			
D1901	8-719-027-95	DIODE HSM88WK			
D1902	8-719-055-86	DIODE KV1470TL1-3			
D1903	8-719-027-95	DIODE HSM88WK			
D1904	8-719-055-86	DIODE KV1470TL1-3			
D2702	8-719-052-27	DIODE 1SS351-TB			
D2703	8-719-052-27	DIODE 1SS351-TB			
D6100	8-719-027-95	DIODE HSM88WK			
D6101	8-719-055-86	DIODE KV1470TL1-3			
D7901	8-719-055-86	DIODE KV1470TL1-3			

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< FERRITE BEAD >					
FB1600	1-543-955-11	BEAD, FERRITE (CHIP)		L2707	1-414-754-11	INDUCTOR 10uH	
FB1601	1-543-955-11	BEAD, FERRITE (CHIP)		L2708	1-414-754-11	INDUCTOR 10uH	
FB1900	1-216-864-11	METAL CHIP 0 5% 1/16W		L2709	1-414-754-11	INDUCTOR 10uH	
FB1901	1-216-864-11	METAL CHIP 0 5% 1/16W		L2710	1-414-754-11	INDUCTOR 10uH	
FB1902	1-216-864-11	METAL CHIP 0 5% 1/16W		L2711	1-414-754-11	INDUCTOR 10uH	
FB1903	1-216-864-11	METAL CHIP 0 5% 1/16W		L3100	1-414-754-11	INDUCTOR 10uH	
FB1904	1-216-864-11	METAL CHIP 0 5% 1/16W		L3101	1-414-754-11	INDUCTOR 10uH	
FB1905	1-216-864-11	METAL CHIP 0 5% 1/16W		L3102	1-414-754-11	INDUCTOR 10uH	
FB1906	1-216-864-11	METAL CHIP 0 5% 1/16W		L3103	1-414-754-11	INDUCTOR 10uH	
FB2100	1-543-955-11	BEAD, FERRITE (CHIP)		L3504	1-414-754-11	INDUCTOR 10uH	
FB3100	1-543-955-11	BEAD, FERRITE (CHIP)		L3505	1-412-963-11	INDUCTOR 100uH	
FB6100	1-543-955-11	BEAD, FERRITE (CHIP)		L3506	1-414-753-91	INDUCTOR 4.7uH	
		< FLUORESCENT INDICATOR >		L6100	1-414-755-11	INDUCTOR 22uH	
FL2700	1-411-951-21	DELAY LINE, LC (23NS)		L6101	1-412-936-11	INDUCTOR 0.56uH	
FL2701	1-233-734-21	FILTER, LOW PASS		L7901	1-414-754-11	INDUCTOR 10uH	
		< IC >		L7902	1-414-752-11	INDUCTOR 2.2uH	
IC1600	1-801-487-11	IC TGA-ZA4024GFZ				< TRANSISTOR >	
IC1601	1-801-689-11	IC TGA-D3103HA		Q2701	8-729-425-50	TRANSISTOR 2SB1462Q	
IC1602	1-801-487-11	IC TGA-ZA4024GFZ		Q2702	8-729-425-64	TRANSISTOR 2SD2216Q	
IC1700	8-759-433-17	IC uPD482445LG4-E2-HDC		Q2703	8-729-425-64	TRANSISTOR 2SD2216Q	
IC1701	1-801-484-11	IC TGA-uPD82014UB-501-J		Q2704	8-729-425-64	TRANSISTOR 2SD2216Q	
IC1900	1-801-477-11	IC TGA-D3106HA		Q2705	8-729-425-64	TRANSISTOR 2SD2216Q	
IC1901	1-801-478-11	IC TGA-D3107HA		Q2706	8-729-037-72	TRANSISTOR UN9211J-(TX).SO	
IC2100	1-801-733-11	IC TGA-P912032-HA		Q2707	8-729-141-48	TRANSISTOR 2SB624-BV345	
IC2700	8-759-426-25	IC MB88346LPFV-G-BND-ER		Q2708	8-729-928-19	TRANSISTOR 2SA1774R	
IC2701	8-752-371-18	IC CXD2302Q-T4		Q2709	8-729-037-72	TRANSISTOR UN9211J-(TX).SO	
IC2702	8-752-070-12	IC CXA1762Q		Q2710	8-729-425-64	TRANSISTOR 2SD2216Q	
IC2703	8-752-073-50	IC CXA2018Q		Q2711	8-729-425-64	TRANSISTOR 2SD2216Q	
IC2704	8-752-074-59	IC CXA2023R		Q3100	8-729-425-64	TRANSISTOR 2SD2216Q	
IC3100	1-801-732-11	IC TGA-P912032-HA				< RESISTOR >	
IC3101	8-759-433-16	IC MB4195PFV-G-BND-ER		R1601	1-218-953-11	METAL GLAZE 1K 5% 1/16W	
IC3102	8-759-431-30	IC CXA8062R-EB		R1900	1-218-937-11	METAL GLAZE 47 5% 1/16W	
IC3103	8-759-385-94	IC CXA8053Q-TE-B		R1901	1-218-937-11	METAL GLAZE 47 5% 1/16W	
IC3104	8-759-434-46	IC TA8486F(EL)		R1902	1-218-953-11	METAL GLAZE 1K 5% 1/16W	
IC3500	8-759-465-99	IC HD6433837TB55X		R1903	1-218-965-11	METAL GLAZE 10K 5% 1/16W	
IC3501	1-801-480-11	IC TGA-F643845GGF		R1904	1-218-965-11	METAL GLAZE 10K 5% 1/16W	
IC3502	8-759-432-00	IC TSB11LV01PT-TEB		R1905	1-218-961-11	METAL GLAZE 4.7K 5% 1/16W	
IC6101	8-752-386-38	IC CXD3105R-T6		R1906	1-218-937-11	METAL GLAZE 47 5% 1/16W	
IC6102	8-759-445-93	IC AK6440AM-E2		R1907	1-218-949-11	METAL GLAZE 470 5% 1/16W	
IC7901	1-801-473-11	IC TGA-D2707HF		R1908	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
IC7903	1-801-486-11	IC TGA-MSM6602A-3BV		R1909	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
IC7904	8-759-710-79	IC NJM2107F		R1911	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
		< COIL >		R1912	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
L1600	1-216-295-91	CONDUCTOR, CHIP (2012)		R1914	1-218-990-11	CONDUCTOR, CHIP (1005)	
L1601	1-216-295-91	CONDUCTOR, CHIP (2012)		R1917	1-218-949-11	METAL GLAZE 470 5% 1/16W	
L1900	1-414-755-11	INDUCTOR 22uH		R1918	1-218-965-11	METAL GLAZE 10K 5% 1/16W	
L1901	1-412-938-61	INDUCTOR 0.82uH		R1919	1-218-965-11	METAL GLAZE 10K 5% 1/16W	
L1902	1-412-948-11	INDUCTOR 5.6uH		R1920	1-218-947-11	METAL GLAZE 330 5% 1/16W	
L2100	1-414-754-11	INDUCTOR 10uH		R1921	1-218-937-11	METAL GLAZE 47 5% 1/16W	
L2700	1-412-963-11	INDUCTOR 100uH		R1922	1-218-961-11	METAL GLAZE 4.7K 5% 1/16W	
L2703	1-412-963-11	INDUCTOR 100uH		R1924	1-218-953-11	METAL GLAZE 1K 5% 1/16W	
L2704	1-414-754-11	INDUCTOR 10uH		R1925	1-218-953-11	METAL GLAZE 1K 5% 1/16W	
L2705	1-414-754-11	INDUCTOR 10uH		R1926	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
				R1927	1-218-937-11	METAL GLAZE 47 5% 1/16W	
				R1928	1-218-937-11	METAL GLAZE 47 5% 1/16W	

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R1929	1-218-990-11	CONDUCTOR, CHIP (1005)				R2770	1-218-947-11	METAL GLAZE	330	5%	1/16W
R2122	1-218-977-11	METAL GLAZE	100K	5%	1/16W	R2817	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W
R2123	1-218-977-11	METAL GLAZE	100K	5%	1/16W						
R2124	1-218-953-11	METAL GLAZE	1K	5%	1/16W	R2818	1-218-942-11	METAL GLAZE	120	5%	1/16W
R2125	1-218-977-11	METAL GLAZE	100K	5%	1/16W	R2819	1-218-942-11	METAL GLAZE	120	5%	1/16W
						R2820	1-218-939-11	METAL GLAZE	68	5%	1/16W
R2126	1-218-977-11	METAL GLAZE	100K	5%	1/16W	R2821	1-218-965-11	METAL GLAZE	10K	5%	1/16W
R2127	1-218-977-11	METAL GLAZE	100K	5%	1/16W	R2822	1-218-939-11	METAL GLAZE	68	5%	1/16W
R2128	1-218-977-11	METAL GLAZE	100K	5%	1/16W						
R2129	1-218-977-11	METAL GLAZE	100K	5%	1/16W	R2823	1-218-965-11	METAL GLAZE	10K	5%	1/16W
R2130	1-218-977-11	METAL GLAZE	100K	5%	1/16W	R2824	1-218-961-11	METAL GLAZE	4.7K	5%	1/16W
						R3100	1-218-985-11	METAL GLAZE	470K	5%	1/16W
R2131	1-218-961-11	METAL GLAZE	4.7K	5%	1/16W	R3101	1-218-985-11	METAL GLAZE	470K	5%	1/16W
R2172	1-218-977-11	METAL GLAZE	100K	5%	1/16W	R3102	1-218-985-11	METAL GLAZE	470K	5%	1/16W
R2173	1-218-973-11	METAL GLAZE	47K	5%	1/16W						
R2175	1-218-973-11	METAL GLAZE	47K	5%	1/16W	R3103	1-218-985-11	METAL GLAZE	470K	5%	1/16W
R2701	1-218-973-11	METAL GLAZE	47K	5%	1/16W	R3109	1-218-985-11	METAL GLAZE	470K	5%	1/16W
						R3110	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R2703	1-218-971-11	METAL GLAZE	33K	5%	1/16W	R3111	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R2704	1-218-953-11	METAL GLAZE	1K	5%	1/16W	R3112	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R2705	1-218-953-11	METAL GLAZE	1K	5%	1/16W						
R2706	1-218-990-11	CONDUCTOR, CHIP (1005)				R3117	1-208-927-11	METAL GLAZE	47K	0.50%	1/16W
R2707	1-218-969-11	METAL GLAZE	22K	5%	1/16W	R3118	1-218-953-11	METAL GLAZE	1K	5%	1/16W
						R3119	1-208-943-11	METAL GLAZE	220K	0.50%	1/16W
R2709	1-218-969-11	METAL GLAZE	22K	5%	1/16W	R3120	1-218-961-11	METAL GLAZE	4.7K	5%	1/16W
R2711	1-218-985-11	METAL GLAZE	470K	5%	1/16W	R3122	1-218-971-11	METAL GLAZE	33K	5%	1/16W
R2712	1-218-985-11	METAL GLAZE	470K	5%	1/16W						
R2713	1-218-969-11	METAL GLAZE	22K	5%	1/16W	R3123	1-218-979-11	METAL GLAZE	150K	5%	1/16W
R2714	1-218-971-11	METAL GLAZE	33K	5%	1/16W	R3124	1-218-963-11	METAL GLAZE	6.8K	5%	1/16W
						R3125	1-208-939-11	METAL GLAZE	150K	0.50%	1/16W
R2717	1-218-953-11	METAL GLAZE	1K	5%	1/16W	R3126	1-208-707-11	METAL GLAZE	10K	0.50%	1/16W
R2718	1-218-973-11	METAL GLAZE	47K	5%	1/16W	R3127	1-218-965-11	METAL GLAZE	10K	5%	1/16W
R2719	1-218-971-11	METAL GLAZE	33K	5%	1/16W						
R2720	1-218-961-11	METAL GLAZE	4.7K	5%	1/16W	R3128	1-218-965-11	METAL GLAZE	10K	5%	1/16W
R2721	1-218-939-11	METAL GLAZE	68	5%	1/16W	R3129	1-218-965-11	METAL GLAZE	10K	5%	1/16W
						R3130	1-218-978-11	METAL GLAZE	120K	0.50%	1/16W
R2727	1-218-948-11	METAL GLAZE	390	5%	1/16W	R3131	1-208-953-11	METAL GLAZE	560K	0.50%	1/16W
R2735	1-218-973-11	METAL GLAZE	47K	5%	1/16W	R3132	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R2737	1-218-950-11	METAL GLAZE	560	5%	1/16W						
R2738	1-218-944-11	METAL GLAZE	180	5%	1/16W	R3133	1-208-715-11	METAL GLAZE	22K	0.50%	1/16W
R2740	1-218-967-11	METAL GLAZE	15K	5%	1/16W	R3134	1-208-715-11	METAL GLAZE	22K	0.50%	1/16W
						R3138	1-218-965-11	METAL GLAZE	10K	5%	1/16W
R2741	1-218-969-11	METAL GLAZE	22K	5%	1/16W	R3139	1-218-965-11	METAL GLAZE	10K	5%	1/16W
R2743						R3140	1-208-707-11	METAL GLAZE	10K	0.50%	1/16W
	1-218-965-11	METAL GLAZE	10K	5%	1/16W						
R2744	1-218-965-11	METAL GLAZE	10K	5%	1/16W	R3141	1-217-671-11	METAL CHIP	1	5%	1/10W
R2747	1-218-949-11	METAL GLAZE	470	5%	1/16W	R3142	1-217-671-11	METAL CHIP	1	5%	1/10W
R2748	1-218-942-11	METAL GLAZE	120	5%	1/16W	R3143	1-218-965-11	METAL GLAZE	10K	5%	1/16W
						R3144	1-208-935-11	METAL GLAZE	100K	0.50%	1/16W
R2749	1-218-942-11	METAL GLAZE	120	5%	1/16W	R3145	1-218-989-11	METAL GLAZE	1M	5%	1/16W
R2750	1-218-956-11	METAL GLAZE	1.8K	5%	1/16W						
R2751	1-218-973-11	METAL GLAZE	47K	5%	1/16W	R3146	1-218-941-11	METAL GLAZE	100	5%	1/16W
R2752	1-218-948-11	METAL GLAZE	390	0.50%	1/16W	R3147	1-218-941-11	METAL GLAZE	100	5%	1/16W
R2753	1-208-671-11	METAL GLAZE	330	0.50%	1/16W	R3148	1-218-941-11	METAL GLAZE	100	5%	1/16W
						R3149					
R2754	1-208-671-11	METAL GLAZE	330	0.50%	1/16W		1-218-971-11				
R2755	1-218-948-11	METAL GLAZE	390	0.50%	1/16W			METAL GLAZE	33K	5%	1/16W
R2756	1-218-956-11	METAL GLAZE	1.8K	5%	1/16W	R3150	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W
R2757	1-218-963-11	METAL GLAZE	6.8K	5%	1/16W						
R2758	1-218-969-11	METAL GLAZE	22K	5%	1/16W	R3151	1-218-965-11	METAL GLAZE	10K	5%	1/16W
						R3152	1-218-965-11	METAL GLAZE	10K	5%	1/16W
R2759	1-218-966-11	METAL GLAZE	12K	5%	1/16W	R3153	1-218-969-11	METAL GLAZE	22K	5%	1/16W
R2760	1-218-963-11	METAL GLAZE	6.8K	5%	1/16W	R3154	1-217-671-11	METAL CHIP	1	5%	1/10W
R2761	1-218-965-11	METAL GLAZE	10K	5%	1/16W	R3155	1-217-671-11	METAL CHIP	1	5%	1/10W
R2765	1-218-947-11	METAL GLAZE	330	5%	1/16W						
R2766	1-218-959-11	METAL GLAZE	3.3K	5%	1/16W	R3156	1-217-671-11	METAL CHIP	1	5%	1/10W
						R3157	1-217-671-11	METAL CHIP	1	5%	1/10W
R2767	1-218-948-11	METAL GLAZE	390	5%	1/16W	R3158	1-218-959-11	METAL GLAZE	3.3K	5%	1/16W
R2768	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W	R3159	1-217-671-11	METAL CHIP	1	5%	1/10W
R2769	1-218-959-11	METAL GLAZE	3.3K	5%	1/16W	R3160	1-217-671-11	METAL CHIP	1	5%	1/10W

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R3161	1-217-671-11	METAL CHIP	1	5%	1/10W	R7902	1-218-989-11	METAL GLAZE	1M	5%	1/16W
R3162	1-217-671-11	METAL CHIP	1	5%	1/10W	R7903	1-218-947-11	METAL GLAZE	330	5%	1/16W
R3163	1-218-940-11	METAL GLAZE	82	5%	1/16W						
R3164	1-218-961-11	METAL GLAZE	4.7K	5%	1/16W	R7904	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R3165	1-218-965-11	METAL GLAZE	10K	5%	1/16W	R7905	1-218-973-11	METAL GLAZE	47K	5%	1/16W
						R7906	1-218-965-11	METAL GLAZE	10K	5%	1/16W
R3166	1-218-941-11	METAL GLAZE	100	5%	1/16W	R7907	1-218-973-11	METAL GLAZE	47K	5%	1/16W
R3167	1-218-953-11	METAL GLAZE	1K	5%	1/16W	R7908	1-218-973-11	METAL GLAZE	47K	5%	1/16W
R3168	1-218-977-11	METAL GLAZE	100K	5%	1/16W						
R3169	1-218-977-11	METAL GLAZE	100K	5%	1/16W	R7909	1-218-973-11	METAL GLAZE	47K	5%	1/16W
R3173	1-218-959-11	METAL GLAZE	3.3K	5%	1/16W	R7910	1-218-973-11	METAL GLAZE	47K	5%	1/16W
						R7911	1-218-974-11	METAL GLAZE	56K	5%	1/16W
R3174	1-218-963-11	METAL GLAZE	6.8K	5%	1/16W	R7912	1-218-990-11	CONDUCTOR, CHIP (1005)			
R3175	1-218-963-11	METAL GLAZE	6.8K	5%	1/16W	R7914	1-218-990-11	CONDUCTOR, CHIP (1005)			
R3176	1-208-721-11	METAL GLAZE	39K	0.50%	1/16W						
R3177	1-218-970-11	METAL GLAZE	27K	5%	1/16W	R7915	1-218-990-11	CONDUCTOR, CHIP (1005)			
R3178	1-218-967-11	METAL GLAZE	15K	5%	1/16W	R7916	1-218-990-11	CONDUCTOR, CHIP (1005)			
						R7917	1-218-990-11	CONDUCTOR, CHIP (1005)			
R3179	1-218-949-11	METAL GLAZE	470	5%	1/16W	R7918	1-218-990-11	CONDUCTOR, CHIP (1005)			
R3180	1-218-990-11	CONDUCTOR, CHIP (1005)				R7919	1-218-973-11	METAL GLAZE	47K	5%	1/16W
R3500	1-218-989-11	METAL GLAZE	1M	5%	1/16W			< VIBRATOR >			
R3501	1-218-977-11	METAL GLAZE	100K	5%	1/16W						
R3502	1-218-953-11	METAL GLAZE	1K	5%	1/16W						
						X1900	1-767-449-11	VIBRATOR, CRYSTAL (27MHz)			
R3528	1-218-965-11	METAL GLAZE	10K	5%	1/16W	X3100	1-760-655-41	VIBRATOR, CRYSTAL (20MHz)			
R3529	1-218-965-11	METAL GLAZE	10K	5%	1/16W	X3500	1-760-497-21	VIBRATOR, LITHIUM NIOBATE (6MHz)			
R3530	1-218-953-11	METAL GLAZE	1K	5%	1/16W	X7901	1-767-399-11	VIBRATOR, CRYSTAL (24.576MHz)			
R3531	1-218-977-11	METAL GLAZE	100K	5%	1/16W						
R3532	1-218-977-11	METAL GLAZE	100K	5%	1/16W						
R3533	1-218-977-11	METAL GLAZE	100K	5%	1/16W		A-7073-063-A	TS-1 BOARD, COMPLETE			
R3534	1-218-965-11	METAL GLAZE	10K	5%	1/16W			*****			
R3535	1-218-965-11	METAL GLAZE	10K	5%	1/16W						(Ref. No. 50,000 Series)
R3538	1-208-913-81	METAL GLAZE	12K	0.50%	1/16W						
R3539	1-208-913-81	METAL GLAZE	12K	0.50%	1/16W						< CONNECTOR >
R3540	1-218-990-11	CONDUCTOR, CHIP (1005)									
R3541	1-208-707-11	METAL GLAZE	10K	0.50%	1/16W	* CN9861	1-774-634-11	CONNECTOR, FFC/FPC 9P			
R3542	1-208-707-11	METAL GLAZE	10K	0.50%	1/16W	CN9862	1-573-925-11	CONNECTOR, FFC/FPC (ZIF) 16P			
R3543	1-218-938-11	METAL GLAZE	56	0.50%	1/16W						< DIODE >
R3544	1-218-938-11	METAL GLAZE	56	0.50%	1/16W						
R3545	1-218-938-11	METAL GLAZE	56	0.50%	1/16W	D9861	8-719-037-97	DIODE CL-190R-CD (LASER LINK)			
R3546	1-218-938-11	METAL GLAZE	56	0.50%	1/16W						< RESISTOR >
R3556	1-218-965-11	METAL GLAZE	10K	5%	1/16W						
R3557	1-218-965-11	METAL GLAZE	10K	5%	1/16W	R9861	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R3560	1-218-990-11	CONDUCTOR, CHIP (1005)				R9862	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
						R9863	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R3561	1-218-977-11	METAL GLAZE	100K	5%	1/16W	R9864	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R3562	1-218-977-11	METAL GLAZE	100K	5%	1/16W	R9865	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R6100	1-218-965-11	METAL GLAZE	10K	5%	1/16W						
R6101	1-218-965-11	METAL GLAZE	10K	5%	1/16W	R9866	1-216-838-11	METAL CHIP	27K	5%	1/16W
R6102	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W	R9867	1-216-813-11	METAL CHIP	220	5%	1/16W
R6103	1-218-946-11	METAL GLAZE	270	5%	1/16W						< SWITCH >
R6104	1-218-941-11	METAL GLAZE	100	5%	1/16W						
R6105	1-218-953-11	METAL GLAZE	1K	5%	1/16W	S9861	1-771-106-11	SWITCH, TACTILE (LASER LINK)			
R6107	1-218-977-11	METAL GLAZE	100K	5%	1/16W	S9862	1-762-982-11	SWITCH, TACTILE (FADER)			
R6111	1-218-953-11	METAL GLAZE	1K	5%	1/16W	S9863	1-771-106-11	SWITCH, TACTILE (EDIT SEARCH +)			
						S9864	1-771-106-11	SWITCH, TACTILE (BACK LIGHT)			
R6112	1-218-953-11	METAL GLAZE	1K	5%	1/16W	S9865	1-771-106-11	SWITCH, TACTILE (EDIT SEARCH -)			
R6113	1-218-953-11	METAL GLAZE	1K	5%	1/16W						
R6114	1-218-953-11	METAL GLAZE	1K	5%	1/16W						
R6115	1-218-953-11	METAL GLAZE	1K	5%	1/16W						
R6116	1-218-953-11	METAL GLAZE	1K	5%	1/16W						
R6117	1-218-953-11	METAL GLAZE	1K	5%	1/16W						
R6118	1-218-990-11	CONDUCTOR, CHIP (1005)									
R7901	1-218-977-11	METAL GLAZE	100K	5%	1/16W						

Ref. No.	Part No.	Description	Remark			
	A-7073-068-A	VF-115 BOARD, COMPLETE				

		(Ref. No. 40,000 Series)				
		< CAPACITOR >				
C4401	1-113-990-11	TANTAL. CHIP	15uF	20%	16V	
C4404	1-104-916-11	TANTAL. CHIP	6.8uF	20%	20V	
C4405	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V	
C4406	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
C4407	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
C4408	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V	
C4409	1-104-912-11	TANTAL. CHIP	3.3uF	20%	6.3V	
C4410	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V	
C4411	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
C4412	1-164-878-11	CERAMIC CHIP	150PF	5%	16V	
C4413	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C4414	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	
C4415	1-165-128-11	CERAMIC CHIP	0.22uF		16V	
C4416	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	
C4417	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
C4418	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
C4419	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V	
C4420	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C4422	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
C4423	1-115-363-11	CERAMIC CHIP	10uF		10V	
C4424	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C4425	1-115-464-91	CERAMIC CHIP	0.0022uF	10%	630V	
C4603	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C4604	1-164-947-11	CERAMIC CHIP	0.01uF		16V	
C4605	1-135-179-21	TANTAL. CHIP	2.2uF	20%	16V	
C4607	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C4608	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V	
C4609	1-135-179-21	TANTAL. CHIP	2.2uF	20%	16V	
C4610	1-165-112-11	CERAMIC CHIP	0.33uF		16V	
C4611	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V	
C4612	1-107-820-11	CERAMIC CHIP	0.1uF		16V	
C4613	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V	
C4616	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C4617	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	
C4618	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
C4619	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V	
C4620	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V	
C4621	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	
C4622	1-164-874-11	CERAMIC CHIP	100PF	5%	16V	
C4623	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C4624	1-164-505-11	CERAMIC CHIP	2.2uF		16V	
C4625	1-165-112-11	CERAMIC CHIP	0.33uF		16V	
C4627	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C4629	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V	
C4630	1-135-179-21	TANTAL. CHIP	2.2uF	20%	16V	
C4631	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
C4632	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
C4636	1-164-947-11	CERAMIC CHIP	0.01uF		16V	
C4637	1-135-179-21	TANTAL. CHIP	2.2uF	20%	16V	
C4638	1-135-179-21	TANTAL. CHIP	2.2uF	20%	16V	
C4639	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V	
C4640	1-107-820-11	CERAMIC CHIP	0.1uF		16V	
C4644	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	

Ref. No.	Part No.	Description	Remark			
< CONNECTOR >						
CN4401	1-774-928-21	CONNECTOR, FFC/FPC 27P				
CN4601	1-691-354-21	CONNECTOR, FFC/FPC (ZIF) 16P				
< DIODE >						
D4401	8-719-043-70	DIODE MA6S121-(TX)				
D4402	8-719-802-36	DIODE 1SS250				
D4601	8-713-102-80	DIODE 1T369-01-T8A				
D4602	8-719-060-95	DIODE CL-200IR-X-TSL-BC				
< IC >						
IC4401	8-759-097-75	IC MB3789PFV-G-BND				
IC4402	8-759-337-40	IC NJM2904V(TE2)				
IC4403	8-759-338-95	IC NJM2903V(TE2)				
IC4601	8-752-070-03	IC CXA1785AR-T4				
IC4602	8-752-377-97	IC CXD2411AR-T4				
IC4603	8-759-427-85	IC MB88146APFV-G-BND-ER				
IC4604	8-759-337-40	IC NJM2904V(TE2)				
IC4605	8-759-363-18	IC TC7ST04FU(TE85R)				
< COIL >						
L4401	1-412-031-11	INDUCTOR CHIP	47uH			
L4402	1-412-029-11	INDUCTOR CHIP	10uH			
L4403	1-412-033-11	INDUCTOR CHIP	220uH			
L4404	1-412-951-11	INDUCTOR	10uH			
L4601	1-412-951-11	INDUCTOR	10uH			
L4602	1-412-951-11	INDUCTOR	10uH			
L4603	1-412-959-11	INDUCTOR	47uH			
L4604	1-412-949-21	INDUCTOR	6.8uH			
< FLUORECENT INDICATOR >						
△ ND4801	1-517-414-31	FLUORESCENT TUBE (0.55 INCH)				
< TRANSISTOR >						
Q4401	8-729-822-05	TRANSISTOR	2SD1622-ST-TD			
Q4403	8-729-928-54	TRANSISTOR	DTA123JE			
Q4404	8-729-425-64	TRANSISTOR	2SD2216Q			
Q4406	8-729-425-64	TRANSISTOR	2SD2216Q			
Q4408	8-729-039-24	TRANSISTOR	FX216-TL1			
Q4601	8-729-427-74	TRANSISTOR	XP4601			
Q4602	8-729-040-26	TRANSISTOR	CPT-182S-C-TSL-CD			
Q4603	8-729-037-75	TRANSISTOR	UN9214J-(TX).SO			
< RESISTOR >						
R4401	1-216-809-11	METAL CHIP	100	5%	1/16W	
R4402	1-218-969-11	METAL GLAZE	22K	5%	1/16W	
R4403	1-218-969-11	METAL GLAZE	22K	5%	1/16W	
R4404	1-218-970-11	METAL GLAZE	27K	5%	1/16W	
R4405	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R4406	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R4411	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R4412	1-218-901-11	METAL GLAZE	180K	0.50%	1/16W	
R4413	1-218-887-11	METAL GLAZE	47K	0.50%	1/16W	
R4414	1-218-975-11	METAL GLAZE	68K	5%	1/16W	
R4415	1-218-970-11	METAL GLAZE	27K	5%	1/16W	
R4416	1-218-979-11	METAL GLAZE	150K	5%	1/16W	
R4417	1-218-973-11	METAL GLAZE	47K	5%	1/16W	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
R4418	1-218-974-11	METAL GLAZE	56K	5%	1/16W
R4419	1-218-982-11	METAL GLAZE	270K	5%	1/16W
R4420	1-218-975-11	METAL GLAZE	68K	5%	1/16W
R4421	1-218-974-11	METAL GLAZE	56K	5%	1/16W
R4422	1-218-982-11	METAL GLAZE	270K	5%	1/16W
R4423	1-218-965-11	METAL GLAZE	10K	5%	1/16W
R4424	1-218-983-11	METAL GLAZE	330K	5%	1/16W
R4425	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R4426	1-218-954-11	METAL GLAZE	1.2K	5%	1/16W
R4429	1-218-981-11	METAL GLAZE	220K	5%	1/16W
R4430	1-218-969-11	METAL GLAZE	22K	5%	1/16W
R4431	1-218-985-11	METAL GLAZE	470K	5%	1/16W
R4432	1-218-985-11	METAL GLAZE	470K	5%	1/16W
R4433	1-218-973-11	METAL GLAZE	47K	5%	1/16W
R4439	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R4440	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R4441	1-218-929-11	METAL GLAZE	10	5%	1/16W
R4442	1-216-166-00	METAL GLAZE	47	5%	1/8W
R4443	1-218-973-11	METAL GLAZE	47K	5%	1/16W
R4445	1-218-981-11	METAL GLAZE	220K	5%	1/16W
R4446	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R4447	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R4601	1-218-939-11	METAL GLAZE	68	5%	1/16W
R4602	1-218-971-11	METAL GLAZE	33K	5%	1/16W
R4603	1-218-939-11	METAL GLAZE	68	5%	1/16W
R4604	1-218-939-11	METAL GLAZE	68	5%	1/16W
R4605	1-218-969-11	METAL GLAZE	22K	5%	1/16W
R4606	1-218-970-11	METAL GLAZE	27K	5%	1/16W
R4607	1-218-971-11	METAL GLAZE	33K	5%	1/16W
R4608	1-218-971-11	METAL GLAZE	33K	5%	1/16W
R4609	1-218-971-11	METAL GLAZE	33K	5%	1/16W
R4610	1-218-971-11	METAL GLAZE	33K	5%	1/16W
R4611	1-218-971-11	METAL GLAZE	33K	5%	1/16W
R4612	1-218-965-11	METAL GLAZE	10K	5%	1/16W
R4614	1-218-953-11	METAL GLAZE	1K	5%	1/16W
R4618	1-218-905-11	METAL GLAZE	270K	0.50%	1/16W
R4619	1-218-875-11	METAL GLAZE	15K	0.50%	1/16W
R4620	1-218-981-11	METAL GLAZE	220K	5%	1/16W
R4621	1-218-969-11	METAL GLAZE	22K	5%	1/16W
R4622	1-218-973-11	METAL GLAZE	47K	5%	1/16W
R4623	1-218-899-11	METAL GLAZE	150K	0.50%	1/16W
R4624	1-218-903-11	METAL GLAZE	220K	0.50%	1/16W
R4625	1-218-974-11	METAL GLAZE	56K	5%	1/16W
R4626	1-218-899-11	METAL GLAZE	150K	0.50%	1/16W
R4627	1-218-901-11	METAL GLAZE	180K	0.50%	1/16W
R4628	1-218-972-11	METAL GLAZE	39K	5%	1/16W
R4629	1-216-150-91	METAL GLAZE	10	5%	1/8W
R4630	1-218-972-11	METAL GLAZE	39K	5%	1/16W
R4632	1-218-974-11	METAL GLAZE	56K	5%	1/16W
R4633	1-218-972-11	METAL GLAZE	39K	5%	1/16W
R4634	1-218-986-11	METAL GLAZE	560K	5%	1/16W
R4635	1-218-877-11	METAL GLAZE	18K	0.50%	1/16W
R4636	1-218-971-11	METAL GLAZE	33K	5%	1/16W
R4637	1-218-971-11	METAL GLAZE	33K	5%	1/16W
R4638	1-218-971-11	METAL GLAZE	33K	5%	1/16W
R4639	1-218-971-11	METAL GLAZE	33K	5%	1/16W
R4640	1-218-972-11	METAL GLAZE	39K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R4641	1-218-968-11	METAL GLAZE	18K	5%	1/16W
R4642	1-218-959-11	METAL GLAZE	3.3K	5%	1/16W
R4643	1-218-964-11	METAL GLAZE	8.2K	5%	1/16W
R4644	1-218-982-11	METAL GLAZE	270K	5%	1/16W
R4645	1-218-977-11	METAL GLAZE	100K	5%	1/16W
R4646	1-218-976-11	METAL GLAZE	82K	5%	1/16W
R4647	1-218-969-11	METAL GLAZE	22K	5%	1/16W
R4648	1-218-961-11	METAL GLAZE	4.7K	5%	1/16W
R4649	1-218-971-11	METAL GLAZE	33K	5%	1/16W
R4650	1-218-971-11	METAL GLAZE	33K	5%	1/16W
R4651	1-218-972-11	METAL GLAZE	39K	5%	1/16W
< TRANSFORMER >					
△T4801	1-429-756-21	TRANSFORMER, INVERTER			
A-7073-066-A VK-42 BOARD, COMPLETE (TRV7/TRV7E:E,Tourist)					

A-7073-204-A VK-42P BOARD, COMPLETE (TRV7E:AEP,UK)					

(Ref. No. 70,000 Series)					
< CONNECTOR >					
CN9951	1-766-335-21	CONNECTOR, FFC/FPC 5P			
CN9952	1-774-633-11	CONNECTOR, FFC/FPC 8P			
< RESISTOR >					
R9951	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R9952	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R9953	1-216-838-11	METAL CHIP	27K	5%	1/16W
R9954	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R9955	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R9956	1-216-821-11	METAL CHIP	1K	5%	1/16W
< SWITCH >					
S9951	1-771-106-11	SWITCH, TACTILE (● REC (DV IN)) (TRV7/TRV7E:E,Tourist)			
S9952	1-771-106-11	SWITCH, TACTILE (▶▶ FF)			
S9953	1-771-106-11	SWITCH, TACTILE (PAUSE)			
S9954	1-771-106-11	SWITCH, TACTILE (● REC (DV IN)) (TRV7/TRV7E:E,Tourist)			
S9955	1-771-106-11	SWITCH, TACTILE (PLAY)			
S9956	1-771-106-11	SWITCH, TACTILE (STOP)			
S9957	1-771-106-11	SWITCH, TACTILE (AUDIO DUB)			
S9958	1-771-106-11	SWITCH, TACTILE (◀◀ REW)			
MISCELLANEOUS					

5	1-665-529-11	FP-542 FLEXIBLE BOARD			
7	1-694-076-31	TERMINAL BOARD, BATTERY			
13	1-665-523-11	FP-558 FLEXIBLE BOARD			
14	1-774-867-21	CONNECTOR,EXTERNAL(HOT SHOE)8P			
58	1-475-122-11	SWITCH BLOCK, CONTROL(MF4810)			
60	1-665-532-11	FP-547 FLEXIBLE BOARD			

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

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Ref. No.	Part No.	Description	Remark
106	1-665-531-11	FP-544 FLEXIBLE BOARD	
109	1-475-121-21	SWITCH BLOCK, CONTROL(PS4810E) (TRV7E:AEP,UK)	
109	1-475-121-31	SWITCH BLOCK, CONTROL(PS4810U) (TRV7/TRV7E:E,Tourist)	
113	1-475-120-11	SWITCH BLOCK, CONTROL(ZK4810)	
114	1-665-527-11	FP-540 FLEXIBLE BOARD	
153	1-665-520-11	FP-535 FLEXIBLE BOARD	
154	1-665-530-11	FP-543 FLEXIBLE BOARD	
155	1-665-519-11	FP-534 FLEXIBLE BOARD	
156	1-665-525-11	FP-537 FLEXIBLE BOARD	
160	1-665-526-11	FP-538 FLEXIBLE BOARD	
201	1-475-123-21	SWITCH BLOCK, CONTROL(CK4810E)	
213	1-665-522-11	FP-546 FLEXIBLE BOARD	
216	1-665-521-11	FP-545 FLEXIBLE BOARD	
* 222	1-957-220-11	HARNES (IS-56)	
251	1-758-011-11	LENS, VIDEO (VCL-4010VB)	
254	1-547-923-21	FILTER BLOCK, OPTICAL	
302	1-665-524-11	FP-536 FLEXIBLE BOARD	
404	1-665-528-11	FP-541 FLEXIBLE BOARD	
715	1-770-363-11	ELASTIC CONNECTOR	
807	1-657-756-11	FP-347 FLEXIBLE BOARD	
874	1-656-250-12	FP-245 FLEXIBLE BOARD	
CN901	1-770-312-11	CONNECTOR 4P	
D901	8-719-050-98	DIODE LN57.S0	
IC101	A-7030-755-A	CCD BLOCK ASSY (080 SERVICE) (CCD IMAGER)(TRV7)	
IC101	A-7030-765-A	CCD BLOCK ASSY (081 SERVICE) (CCD IMAGER)(TRV7E)	
LCD901	1-801-664-21	INDICATOR MODULE, LIQUID CRYSTAL	
LCD902	8-753-016-10	LCX005BK-4	
M901	A-7044-007-A	DRUM ASSY (DEH-07A-R)	
M902	8-835-524-01	MOTOR, DC SCD-0101A (CAPSTAN)	
M903	A-7026-007-A	MOTOR ASSY, LM (LOADING)	
M904	3-709-279-01	MOTOR, FOCUS	
M905	3-709-278-01	MOTOR, ZOOM	
MIC901	1-542-325-11	MICROPHONE	
MIC902	1-542-325-11	MICROPHONE	
△ ND4801	1-517-414-31	FLUORESCENT TUBE (0.55 INCH)	
△ ND901	1-517-656-21	TUBE, FLUORESCENT COLD CATHODE	
Q901	8-729-028-71	TRANSISTOR PN166.S0 (TAPE TOP)	
Q902	8-729-028-71	TRANSISTOR PN166.S0 (TAPE END)	
S901	1-762-351-11	SWITCH, PUSH (1 KEY)(REC PROOF)	
SE500	1-801-731-31	SENSOR, ANGULAR VELOCITY (43kHz)(YAW)	
SE501	1-810-725-71	SENSOR, ANGULAR VELOCITY (PITCH)	
SP901	1-505-425-11	SPEAKER (2.8CM)	

ACCESSORIES & PACKING MATERIALS *****

1-475-141-21	COMMANDER, REMOTE (RMT-808) (TRV7/TRV7E:E,Tourist)
1-475-141-31	COMMANDER, REMOTE (RMT-809) (TRV7E:AEP,UK)
1-569-008-11	ADAPTOR, CONVERSION 2P (TRV7:Tourist/TRV7E:E,Tourist)
1-573-291-11	CONNECTOR, CONVERSION (TRV7E:AEP,UK)
1-765-080-11	CORD, CONNECTION (A/V connecting cable, 1.5m)(TRV7)

Be sure to read "Note on the CCD Imager replacement" on page 4-9 when changing the CCD imager.

Ref. No.	Part No.	Description	Remark
	1-777-433-21	CORD, CONNECTION (A/V connecting cable, 1.5m)(TRV7E)	
	3-859-517-11	MANUAL, INSTRUCTION (ENGLISH,SPANISH) (TRV7)	
	3-859-517-21	MANUAL, INSTRUCTION (FRENCH)(TRV7)	
	3-859-517-31	MANUAL, INSTRUCTION (CHINESE)(TRV7)	
	3-859-517-41	MANUAL, INSTRUCTION (ENGLISH,RUSSIAN) (TRV7E:AEP,UK)	
	3-859-517-51	MANUAL, INSTRUCTION (GERMAN,ITALIAN) (TRV7E:AEP)	
	3-859-517-61	MANUAL, INSTRUCTION (FRENCH,DUTCH) (TRV7E:AEP)	
	3-859-517-71	MANUAL, INSTRUCTION (SPANISH,PORTUGUESE)(TRV7E:AEP)	
	3-859-517-81	MANUAL, INSTRUCTION (KOREAN) (TRV7:Tourist)	
	3-859-868-11	MANUAL, INSTRUCTION (ENGLISH,RUSSIAN) (TRV7E:E,Tourist)	
	3-859-868-21	MANUAL, INSTRUCTION (FRENCH,GERMAN) (TRV7E:E,Tourist)	
	3-859-868-31	MANUAL, INSTRUCTION (ARABIC,PERSIAN) (TRV7E:E,Tourist)	
	3-859-868-41	MANUAL, INSTRUCTION (CHINESE)(TRV7E:E)	
	3-947-969-21	BELT (S), SHOULDER	
*	3-977-933-01	INDIVIDUAL CARTON (TRV7E:AEP,UK)	
*	3-977-933-11	INDIVIDUAL CARTON (TRV7:Tourist/TRV7E:E,Tourist)	
*	3-977-934-01	INDIVIDUAL CARTON (TRV7:US,Canadian,E)	
*	3-978-027-01	CUSHION,ACC	
*	3-978-028-01	CUSHION (LOWER)	
**	AC-V316A	AC POWER ADAPTOR (TRV7:Tourist/TRV7E:E,Tourist)	
**	AC-V326	AC POWER ADAPTOR (TRV7:US,Canadian,E/TRV7E:AEP,UK)	
***	NP-F530	BATTERY PACK	
<u>Note.</u>			
**			

MARK PARTS IS AVAILABLE FOR REPAIR SERVICE.			
MARK PARTS IS AVAILABLE AS AN OPTIONAL ACCESSORY.			

HARDWARE LIST *****

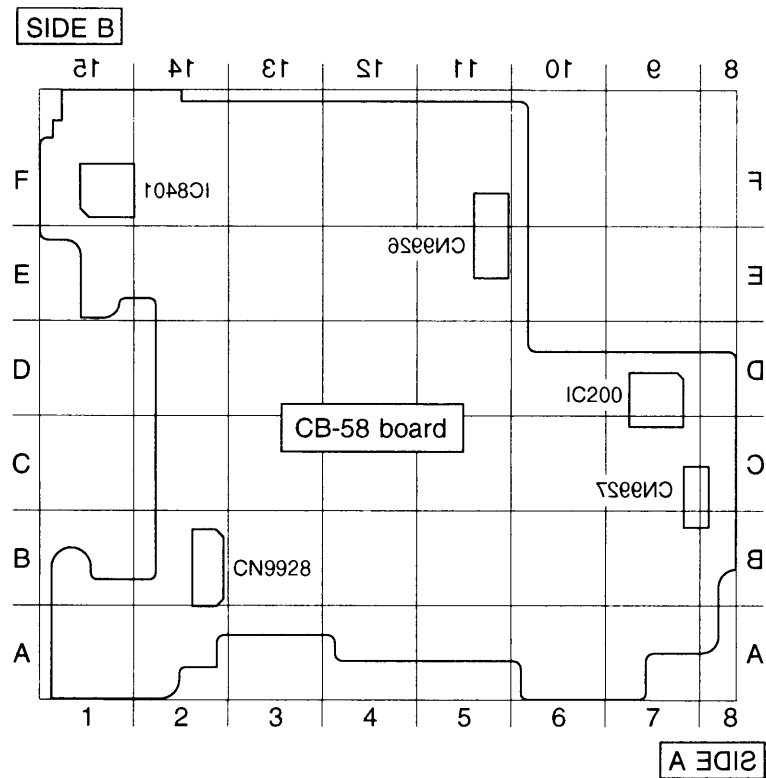
#1	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT
#2	7-624-104-04	STOP RING 2.0, TYPE -E

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

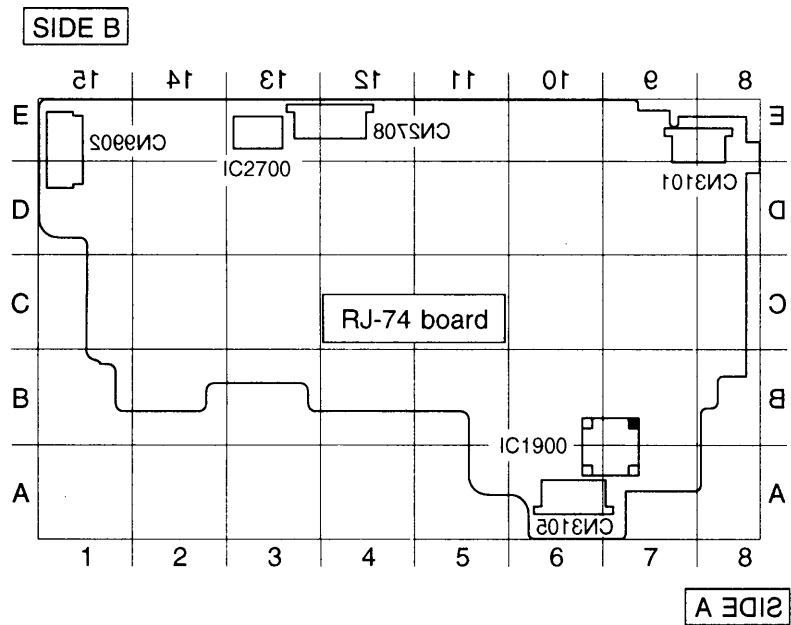
Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

<PARTS REFERENCE SHEET>

You can find the parts position of mount locations applying to boards of a set.

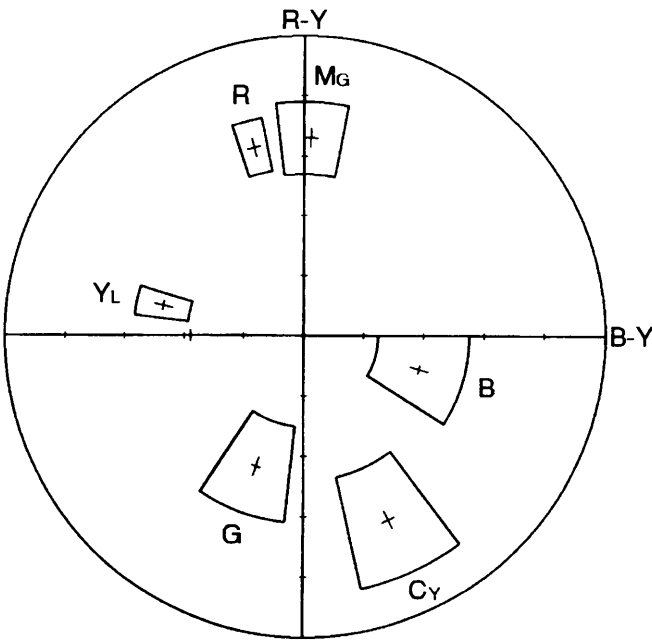


DCR-TRV7/TRV7E



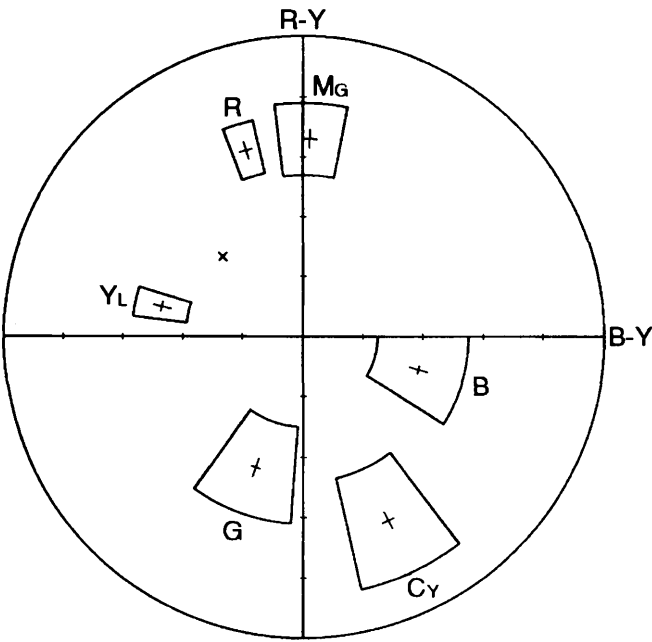
DCR-TRV7/TRV7E

FOR CAMERA COLOR REPRODUCTION ADJUSTMENT



Take a copy CAMERA COLOR REPRODUCTION FRAME and PARTS REFERENCE SHEET with a clear sheet for use.

DCR-TRV7



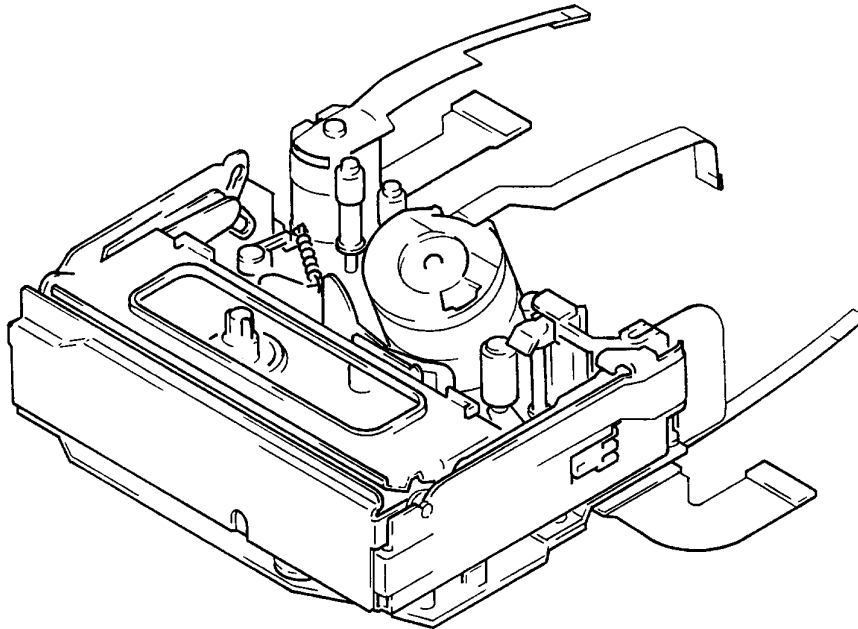
DCR-TRV7E

DV MECHANICAL ADJUSTMENT MANUAL I

D MECHANISM

File with the SERVICE MANUAL.

Mini **DV** Digital
Video
Cassette



Digital MECHANISM
SONY®

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1. PREPARATION FOR MECHANICAL CHECK, ADJUSTMENT AND MAINTENANCE

PREPARATION

- For removal of the cabinet and boards, refer to "Disassembly" in each service manual.
- When the adjustment and maintenance for the mechanical section are performed, select the condition of mechanical deck using mode selector II for easy use to operate. Refer to "2-5. How to handle the mode selector II" to select the following each ☐ mode.

1-1. CASSETTE COMPARTMENT ASSEMBLY

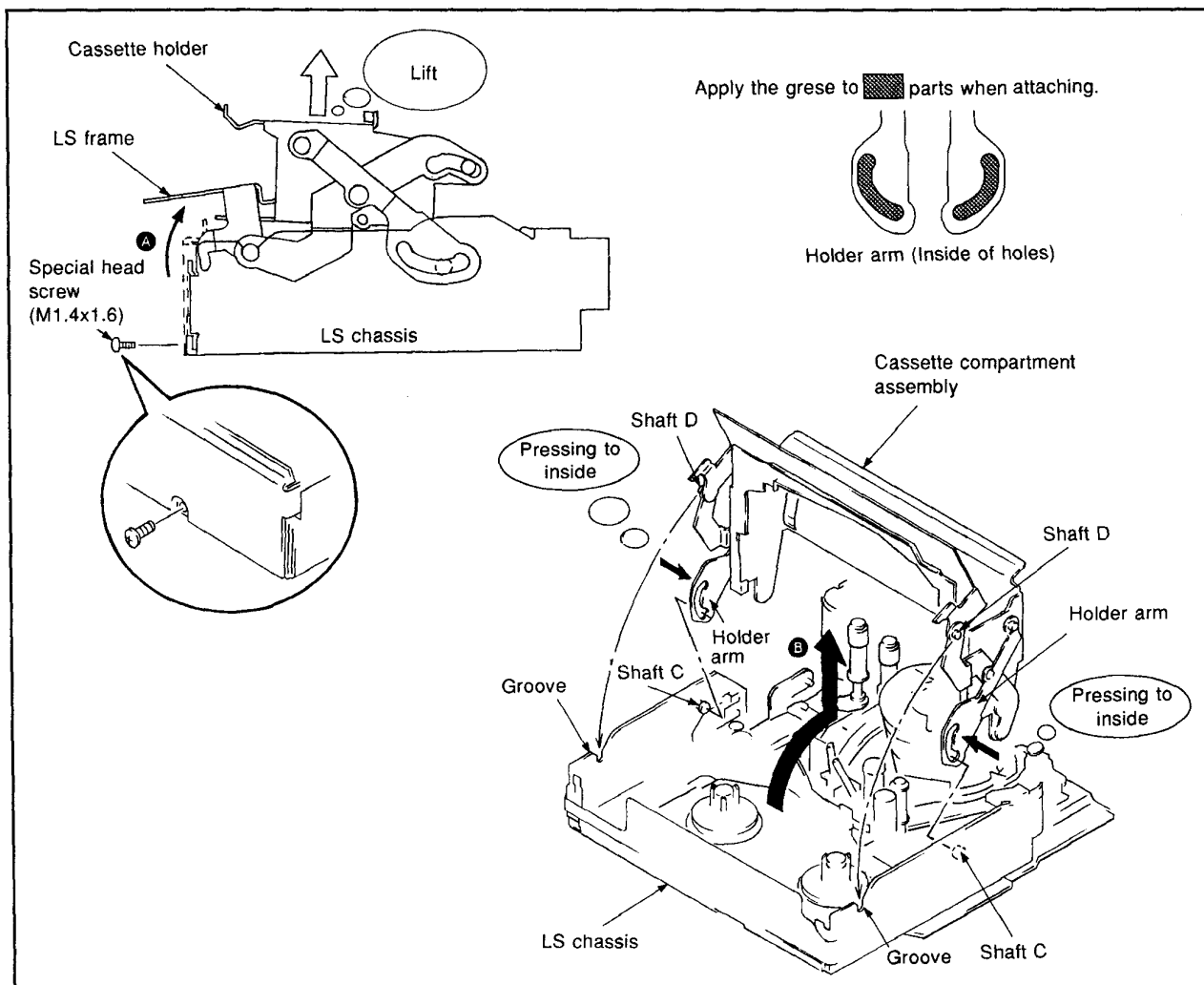
1. Removing

- 1) Set the ☐USE—EJ mode.
- 2) Remove the screw.
- 3) Lift the cassette holder, and move the LS frame to the direction of arrow **A**.
- 4) Lift the cassette compartment assembly to the direction of arrow **B**, then remove pressing the left and right holder arms to inside.

2. Attaching

- 1) Set the ☐USE—EJ mode.
- 2) Apply the grease (two positions, 1.5 mm dia.) to the cassette compartment assembly, then attach it to the shaft C pressing the holder arms to inside.
Grease: Floil Grease (SG-941)
- 3) Pull down the cassette compartment assembly to front, attach the shaft D to a groove of LS chassis, then pull down the LS frame to front.
- 4) Attach the screw.

Fixing torque: 0.0588 N • m (0.6 kg • cm)



2. PERIODIC CHECK AND MAINTENANCE

- Carry out the following maintenance and periodic checks not only to fully display the functions and performance of the set, but also for the equipment and tape. After repairing, service the set as follows, regardless of the length of use.

2-1. CLEANING OF ROTARY DRUM ASSEMBLY

- 1) Press a wiping cloth (Ref No. J-2) moistened with cleaning fluid (Ref No. J-1) against the rotary drum assembly gently, and clean it while rotating the upper rotary drum assembly slowly with your finger in the counterclockwise direction.

Note: Do not rotate the motor on power or rotate the upper rotary drum assembly in the clockwise direction with your finger. The head tip will also be damaged if the wiping cloth is moved perpendicularly against it. Therefore, be sure to follow the above instructions when cleaning the rotary drum assembly.

2-2. CLEANING OF TAPE PATH SYSTEM (See Fig. 1.)

- 1) In the EJECT mode, clean the tape path systems (TG-1, 2, 3, 4, 5, 6, 7, capstan) and the lower drum using a superfine applicator (Ref No. J-3) moistened with cleaning fluid.

Note 1: Make sure that no oil or grease of the link mechanisms sticks to the superfine applicator (Ref No. J-3.)

Note 2: Do not use a applicator moistened with alcohol to the other guide cleaning. But clean the pinch roller using alcohol.

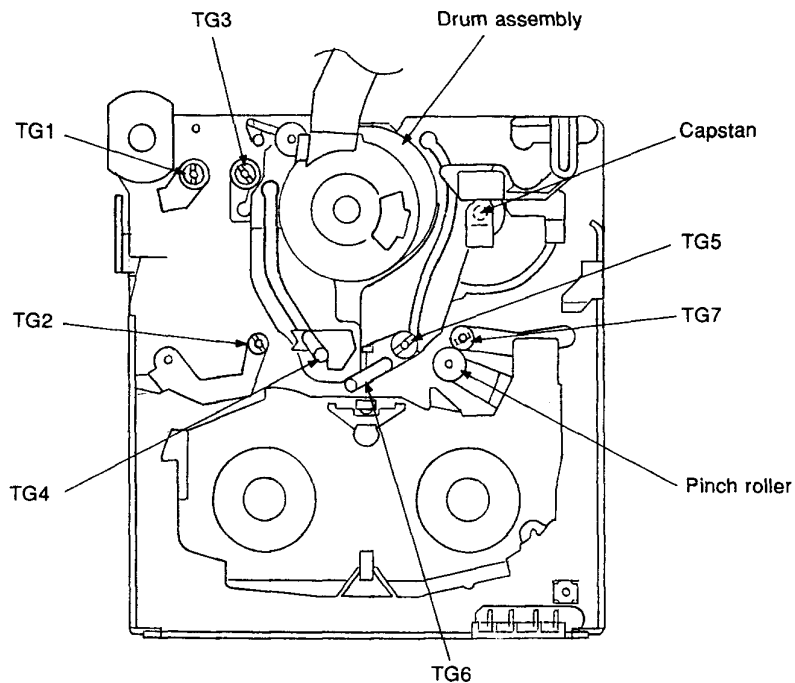


Fig. 1.

2-3. PERIODIC CHECKS

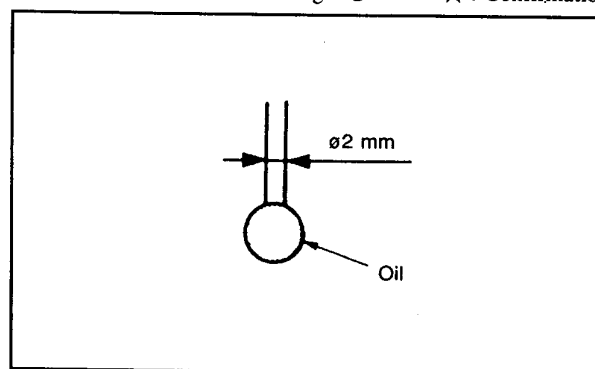
Location of Maintenance and Check		Hours of Use (H)										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
	Cleaning of tape path surface	○	○	○	○	○	○	○	○	○	○	Be careful of the oil
	Cleaning and degaussing of rotary drum assembly	○	○	○	○	○	○	○	○	○	○	Be careful of the oil
Driving System	Relay belt	—	☆	—	☆	—	☆	—	☆	—	☆	3-748-734-01
	Capstan shaft (Bearing)	—	☆	—	☆	—	☆	—	☆	—	☆	Make sure that no oil gets on the tape path surface.
	Conversion gear shaft Relay pulley shaft	—	◎	—	◎	—	◎	—	◎	—	◎	
	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	A-7026-007-A
Performance Confirmation	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD } Torque measurement RVS }	—	☆	—	☆	—	☆	—	☆	—	☆	

○ : Cleaning ◎ : Oil ☆ : Confirmation

Note: When overhauling, refer to the checks above and replace parts.

Note: Oiling

- Be sure to use the specified oil. (If the viscosity of the oil is different, etc., problems may result.)
Oil: Part No. 7-661-018-18
(Mitsubishi Diamond Oil Hydrofluid NT-68)
- When lubricating bearings, be sure to use oil free from dust, etc. (If oil containing dusts, etc. is used, bearings may wear out, burn, etc.)
- A drop of oil means the amount on the tip of a 2 mm diameter stick as shown in the Fig 5.
- FLOIL Grease (SG-941): Part No. 7-662-001-39





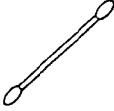
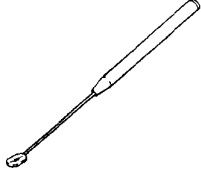
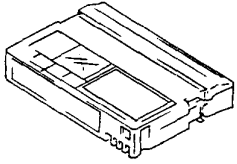
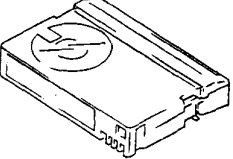
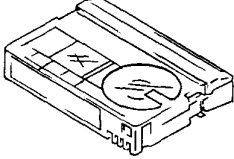
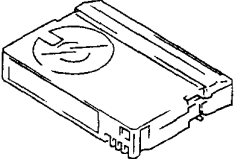
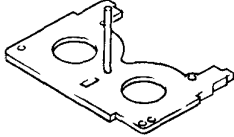





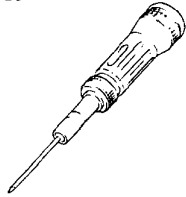
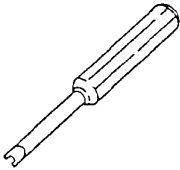
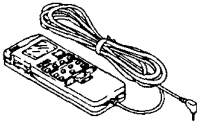
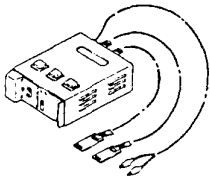
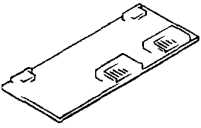
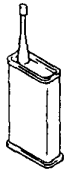
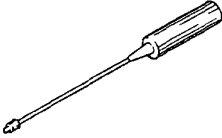
2-4. SERVICE JIGS LIST

Ref. No.	Name	Part No.	Fixtur No.	Usage, Others Application, etc
J-1	Cleaning fluid	Y-2031-001-0		
J-2	Wiping cloth	7-741-900-53		
J-3	Super fine applicator (Made by NIPPON APPLICATOR (P752D))			
J-4	Mirror (Small oval type)	J-6080-840-A	GD-2038	Tape path
J-5	Tracking tape (XH2-1) (NTSC/PAL)	8-967-997-01		Tape path
J-6	RVS torque tape	J-6082-327-A		
J-7	FWD torque (D mechanism) & RVS back tension (E mechanism) tape	J-6082-328-A		
J-8	FWD back tension tape (D/E mechanism)	J-6082-329-A		
J-9	Cassette standerd plate	J-6082-330-A		
J-10	Reel standard plate	J-6082-331-A		
J-11	Dummy drum (D mechnism)	J-6082-332-A		
J-12	TG1 preset base (D mechanism)	J-6082-333-A		
J-13	TG5 preset base (D mechanism)	J-6082-334-A		
J-14	Washer fixture ø0.8	J-6082-233-A		
J-15	Torque driver	J-9049-330-A		
J-16	Screwdriver for tape path	J-6082-026-A		For adjusting tape guide
J-17	Adjusting remote commander (RM-95 remodeled partly) Note1	J-6082-053-B		
J-18	Mode selector II	J-6082-282-A		For all models
J-19	Mode selector II change connctor board	J-6082-335-A		
J-20	Screw lock G (1401B)	7-432-114-11		
J-21	FWD/BACK Tension adjustment driver	J-6082-187-A		For adjusting FWD position and FWD back tension

Other equipment used

- Oscilloscope

Note 1: If the micro processor IC in the adjusting remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replase with the new micro processor (8-759-148-35).

J-1 	J-2 	J-3 	J-4 	J-5 
J-6 	J-7 	J-8 	J-9 	J-10 
J-11 	J-12 	J-13 	J-14 	J-15 
J-16 	J-17 	J-18 	J-19 	J-20 
J-21 				

2-5. USE OF MODE SELECTOR II

2-5-1. Outline

This unit is a mechanism drive tool which supplements the maintenance of each mechanism deck. Its functions are described below.

1. Manual test

A mode which drives the motor only while the switch is ON. It enables the operator to control the motor as desired.

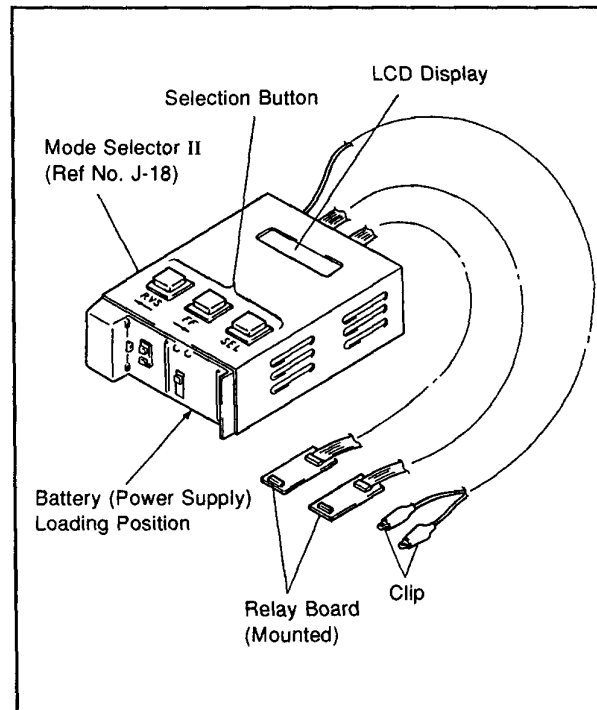
2. Step test

A mode which drives the motor until the current condition detected by the sensor changes to another condition. It enables the movements made by the motor in each operation to be controlled while being checked.

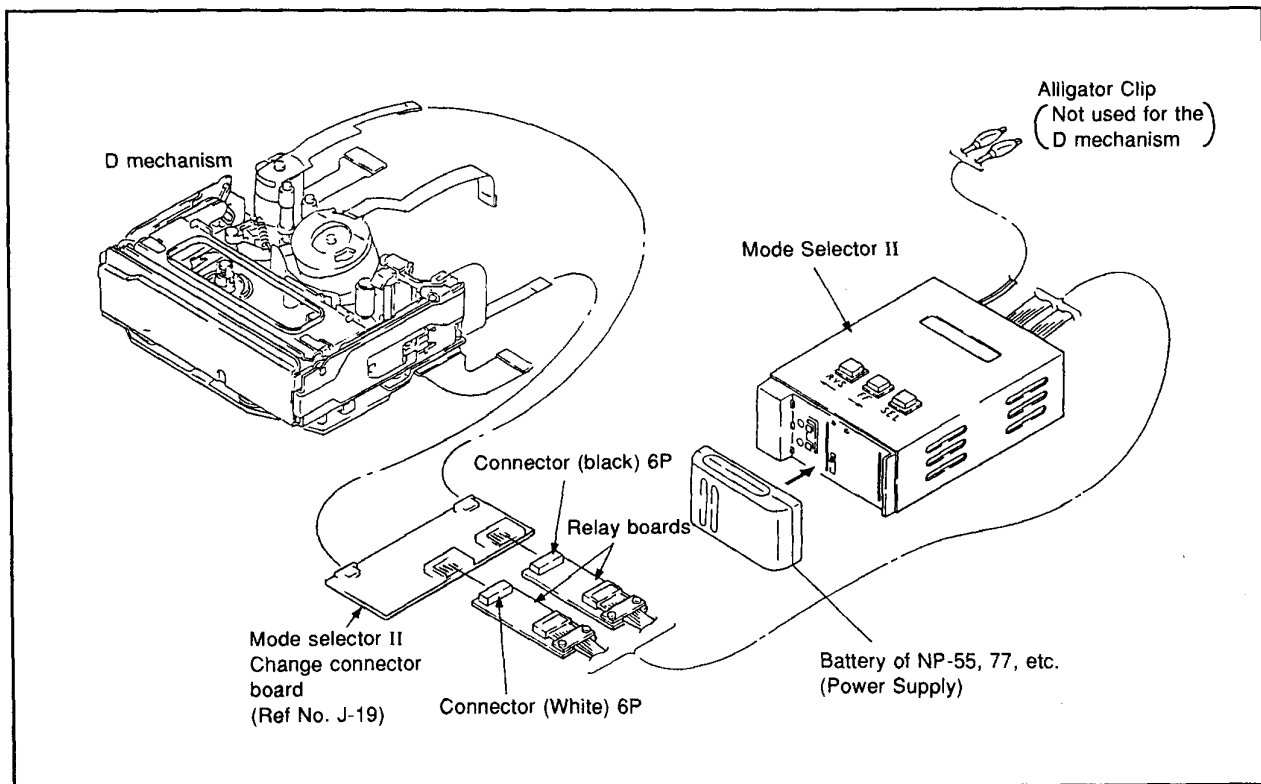
3. Auto test

A mode that checks if the mechanism operates normally according to the condition shift table recorded in the unit for each mechanism deck. All the conditions of the decks are checked through a series of operations.

An error message is displayed if incorrect shifts and conditions are detected and operations are stopped.

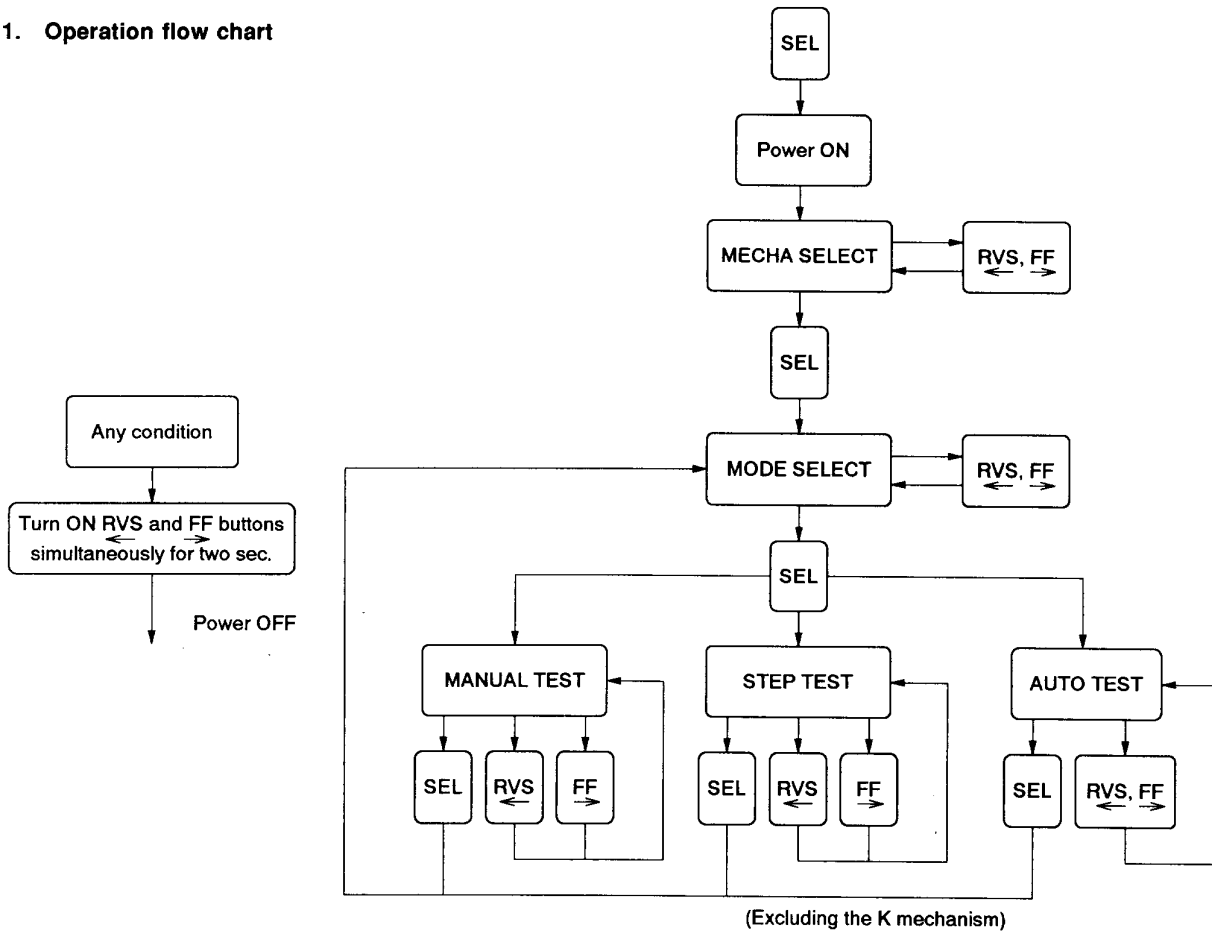


Mode Selector II (J-6082-282-A) Connection



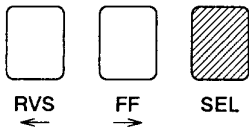
2-5-2. Operation

1. Operation flow chart



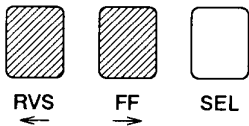
2. Turning ON the mode selector II

To turn ON the power supply, turn on the SEL button.



3. Turning OFF the mode selector II

To turn OFF the power supply, turn on the RVS and FF buttons simultaneously for more two seconds.



4. Mechanism selection

Immediately after the power supply has been turned on, "MECHA SELECT" will be displayed on the LCD. Select the desired mechanism using the RVS and FF buttons, and press the SEL button to complete the selection. (Fig. I shows the D mechanism.)

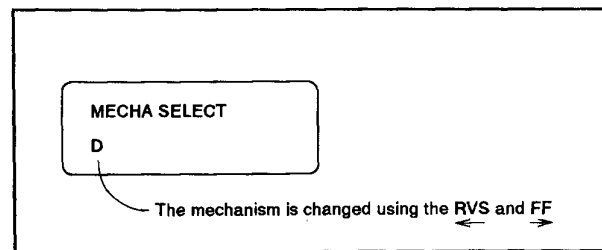


Fig. I

5. Mode selection

Select the test—"MANUAL", "STEP", and "AUTO"—to be executed.

Select the desired mode on the screen using the RVS and FF buttons, and press the SEL button to complete the selection.

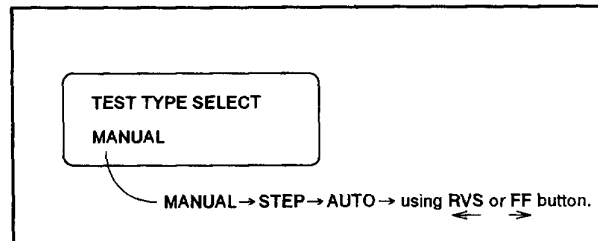


Fig. II

6. Manual test

A mode that drives the motor only when the RVS or FF button is pressed.

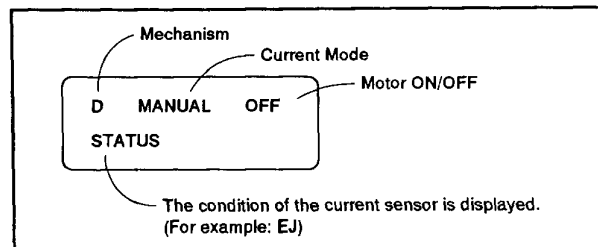


Fig. III

7. Step test

A mode that drives the motor until the direction of motor operations is set using the RVS and FF buttons and the current condition is changed.

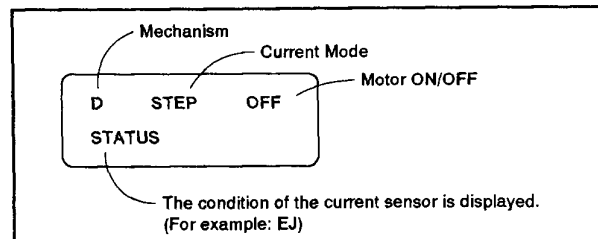


Fig. IV

8. Auto test

Each mechanism deck is checked for its recorded operation sequence. The check is executed by comparing the sensor signals generated in the operation sequence with the recorded operation sequence.

The same operation is carried out when the RVS or FF button is turned on.

Note: Sometimes the AUTO TEST spoils sequence due to a small range of [S. OFF], but this is not a D mechanical trouble.

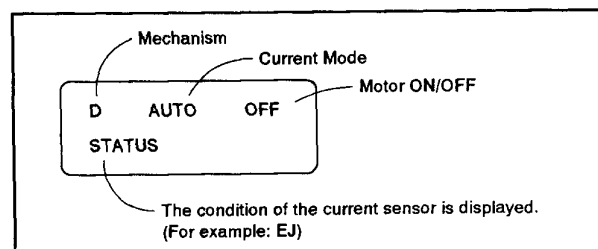


Fig. V

Mechanism condition (position) shifting order

After selecting the mechanism, select one mode from the two test modes, excluding the AUTO test. Then press the RVS or FF button and specify the mechanism condition (position). (Displayed at the STATUS area)

EJ↔USE↔S. OFF↔D. ON↔LE↔STOP↔FF↔R/P↔RVS

9. Battery alarm display

When the battery voltage (power supply unit of the unit) drops, this alarm is displayed, no operations can be carried out and the battery must be changed.

Code		MD name					D mechanism
		A	B	C	D		
1	0	1	0			1	EJ
1	1	1	0			2	USE
1	1	0	0			3	S. OFF
1	1	0	1			4	D. ON
1	0	0	1			5	LE
0	1	0	1			6	STOP
0	1	1	1			7	FF
1	0	1	1			8	R/P
0	0	1	1			9	RVS

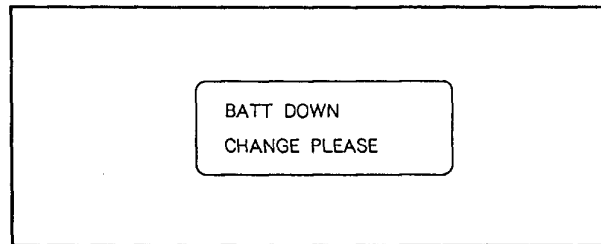


Fig. VI

3. MECHANISM SECTION CHECKS, ADJUSTMENTS AND REPLACEMENTS

3-1. DRUM ASSEMBLY (MOTOR FPC ASSEMBLY AND ELASTIC CONNECTORS)

1. Removing

<Motor FPC assembly and elastic connectors>

- Remove the two screws to remove the motor FPC assembly and elastic connectors.

<Drum assembly>

- Remove the three of drum fitting screw assembly to remove the drum assembly.

2. Attaching

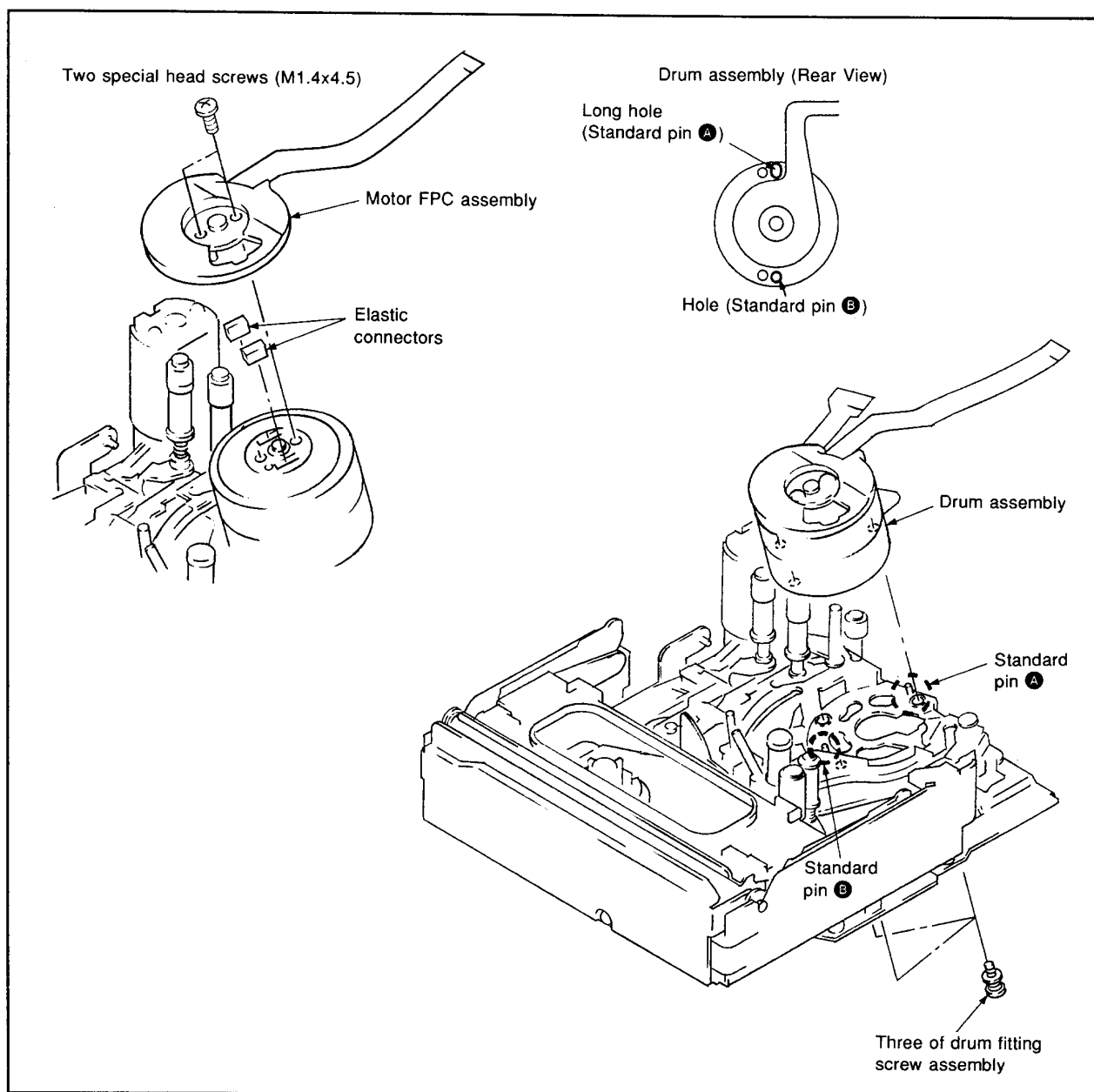
<Motor FPC assembly and elastic connectors>

- 1) Attach the elastic connectors.
- 2) Attach the motor FPC assembly with two screws.
(Pay attention to adjust the position of holes.)

Fixing torque: 0.0490 N • m (0.5 kg • cm)

<Drum assembly>

- 1) Attach the holes on the rear side of drum assembly to standard pin. (Pay attention to the direction of the drum.)
 - 2) Attach the three of drum fitting screw assembly.
- Fixing torque: 0.0392 N • m (0.4 kg • cm)
- 3) Refer to 2-1., perform the cleaning of drum assembly.
 - 4) Carry out the tape path adjustment. (Refer to “4. TAPE PATH ADJUSTMENT”.)



3-2. HC ASSEMBLY

(HC ROLLER ASSEMBLY, HC SLIDE ASSEMBLY AND HC ARM ASSEMBLY)

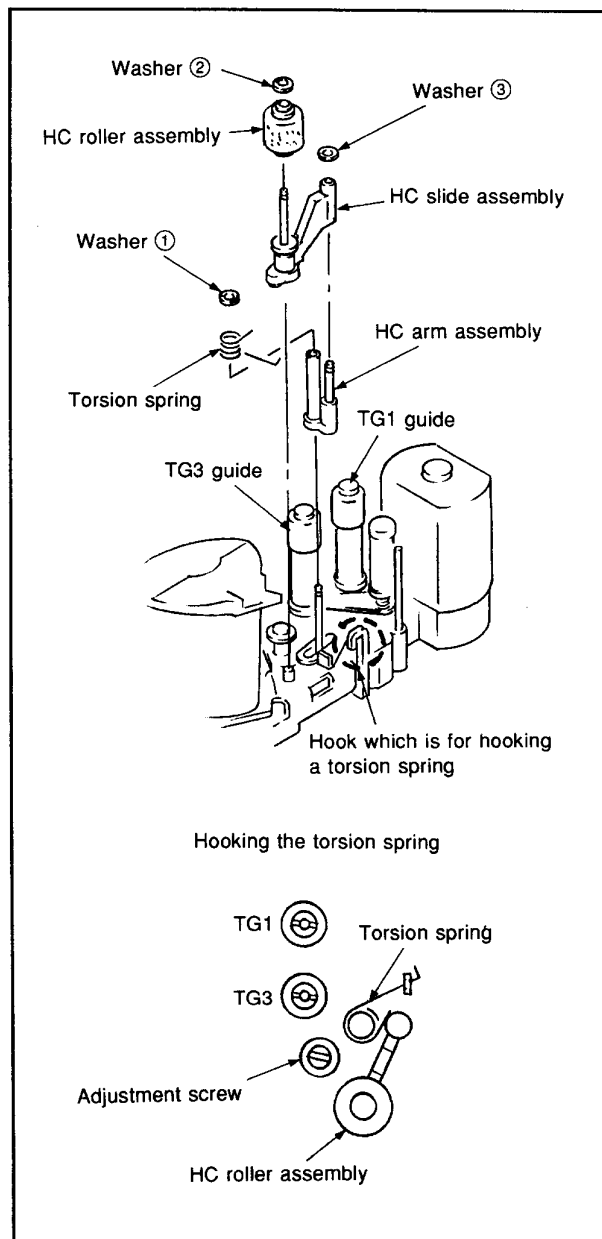
1. Removing

- 1) Remove the washer ①, then remove the HC arm assembly and torsion spring.
- 2) Remove the washer ② and remove the HC roller assembly.
- 3) Remove the washer ③ and remove the HC slide assembly.

2. Attaching

- 1) Attach the HC slide assembly to the HC arm assembly with the washer ③.
- 2) Attach the HC roller assembly to the HC slide assembly with the washer ②.
- 3) Attach the torsion spring and HC assembly with the washer ①.

Note: Pay attention to attach the torsion spring.



3-3. TG1 GUIDE

1. Removing

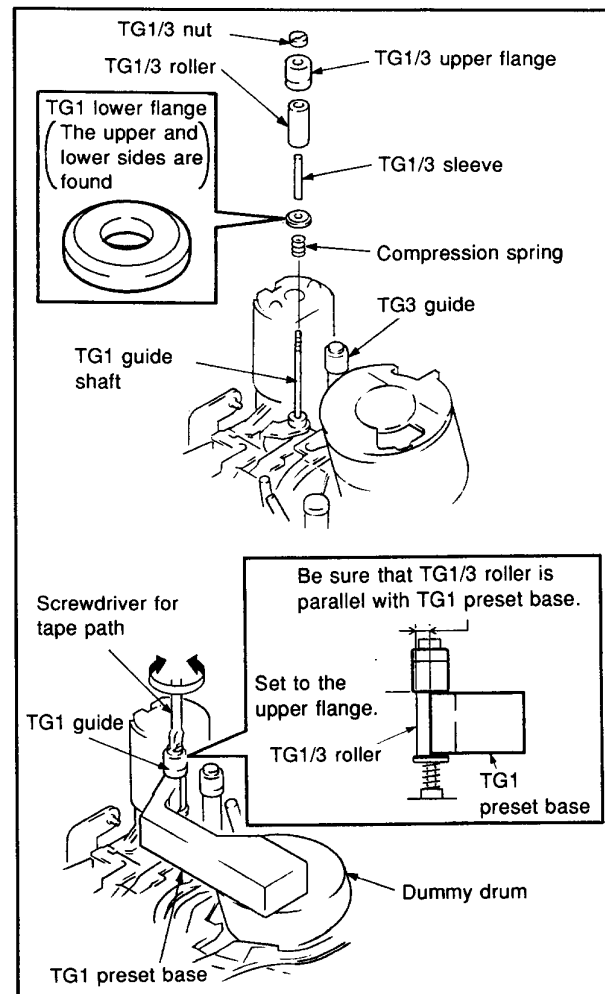
- Remove the TG1/3 nut with a screwdriver for tape path (Ref No. J-16), then remove in the order of TG1/3 upper flange, TG1/3 roller, TG1/3 sleeve, TG1 lower flange and compression spring.

2. Attaching

- 1) Attach in the order of compression spring TG1 lower flange, TG1/3 sleeve, TG1/3 roller, TG1/3 upper flange and TG1/3 nut.
- 2) Refer to 3-1. to remove the drum assembly and attach the dummy drum (Ref No. J-11).
- 3) Put the TG1 preset base (Ref No. J-12) on the dummy drum, adjust the TG1/3 nut with a screwdriver for tape path (Ref No. J-16) to meet the height of TG1/3 upper flange and a jig.
- 4) Refer to 3-1. and attach the drum assembly after removing each jig.
- 5) Refer to 2-2. clean the TG1 guide.
- 6) Adjust the tape path.

(Refer to "4. TAPE PATH ADJUSTMENT".)

Note: If the TG1 guide shaft is damaged, it will be necessary to replace the mechanical chassis block assembly. (Refer to "5. EXPLODED VIEWS".)



3-4. TG3 GUIDE

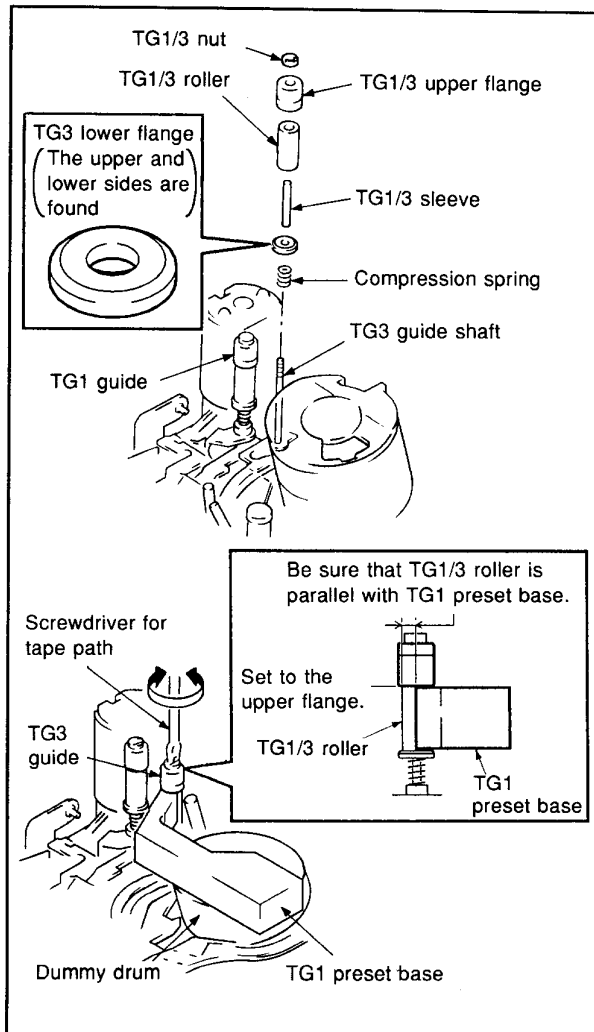
1. Removing

- Remove the TG1/3 nut with a screwdriver for tape path (Ref No. J-16), then remove in the order of TG1/3 upper flange, TG1/3 roller, TG1/3 sleeve, TG3 lower flange and compression spring.

2. Attaching

- Attach in the order of compression spring, TG3 lower flange, TG1/3 sleeve, TG1/3 roller, TG1/3 upper flange and TG1/3 nut.
- Refer to 3-1. to remove the drum assembly and attach the dummy drum (Ref No. J-11).
- Put the TG1 preset base (Ref No. J-12) on the dummy drum, adjust the TG1/3 nut with a screwdriver for tape path (Ref No. J-16) to meet the TG1/3 upper flange and a jig.
- Refer to 3-1. to attach the drum assembly after removing each jig.
- Refer to 2-2. to clean the TG3 guide.
- Adjust the tape path.
(Refer to "4. TAPE PATH ADJUSTMENT".)

Note: If the TG3 guide shaft is damaged, it will be necessary to replace the mechanical chassis block assembly.
(Refer to "5. EXPLODED VIEWS".)



3-5. TG7 GUIDE

1. Removing

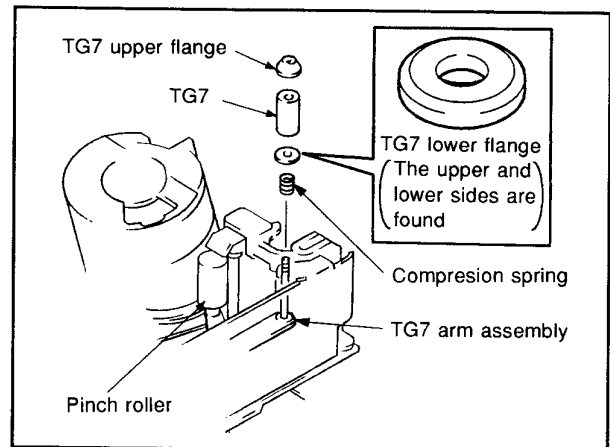
- Remove the TG7 upper flange with a screwdriver for tape path (Ref No. J-16), then remove in the order of TG7, TG7 lower flange and compression spring.

2. Attaching

- Attach in the order of compression spring, TG7 lower flange, TG7 and TG7 upper flange.

Note: Fix temporarily not to come out the TG7 guide shaft from the TG7 upper flange.

- Refer to 2-2. to clean the TG7 guide.
- Adjust the tape path.
(Refer to "4. TAPE PATH ADJUSTMENT".)



3-6. S POSITIONING AND T POSITIONING

1. Removing

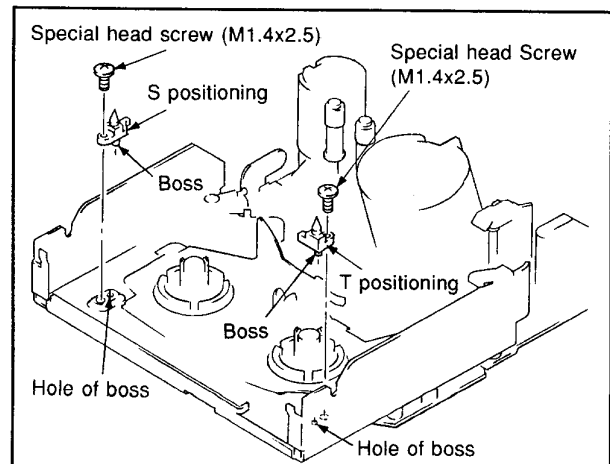
- Refer to 1-1. to lift the cassette compartment assembly.
- Remove each screw, then remove the S positioning and T positioning.

2. Attaching

- Attach the S positioning and T positioning with screws.
Fixing torque: 0.0588 N · m (0.6 kg · cm)

Note: Pay attention to adjust the position of each positioning and side S or T.

- Refer to 1-1. to attach the cassette compartment assembly.



3-7. LOCK LEVER AND SLIDER FOLLOWER

1. Removing

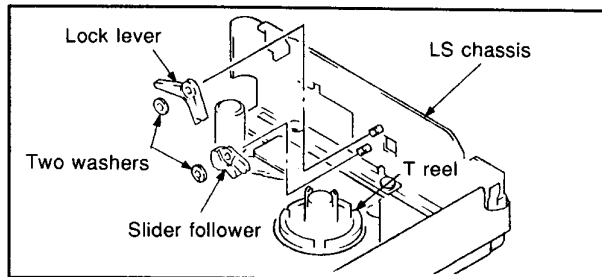
- 1) Refer to 1-1. to lift the cassette compartment assembly.
- 2) Remove each washer, then remove in the order of lock lever and slider follower.

2. Attaching

- 1) Attach in order of slider follower and lock lever with washers.

Note: Pay attention to the direction and attaching position of lock lever and slider follower.

- 2) Refer to 1-1. to attach the cassette compartment assembly.



3-8. LM MOTOR ASSEMBLY

1. Removing

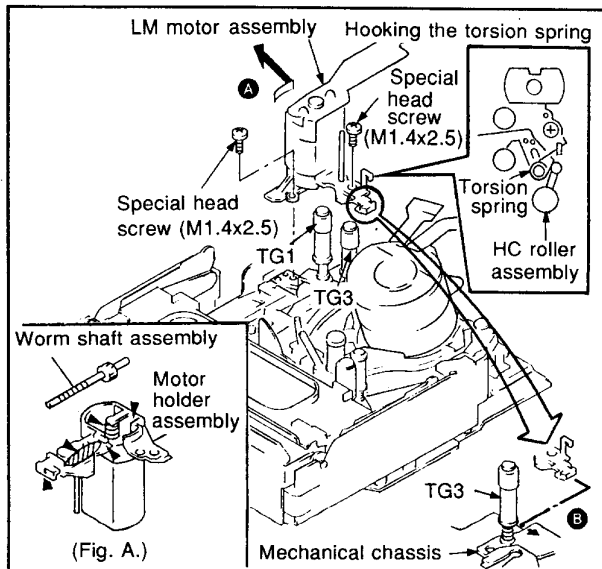
- 1) Set the **LE—STOP** mode.
- 2) Remove the two of screws to remove the LM motor assembly in the direction of arrow **A**.

2. Attaching

- 1) Set the **LE—STOP** mode.
- 2) Attach the LM motor assembly with the two of screws in the direction of arrow **B**.
Fixing torque: 0.0588 N · m (0.6 kg · cm)
- 3) Hook the torsion spring of HC roller assembly.

<Note for replacement of the worm shaft assembly>

- Apply the grease which is applied to the worm shaft assembly before replacement to **►** (Fig. A) of the motor holder assembly.



3-9. CAPSTAN MOTOR

There is an axis compensating spacer between the capstan motor and mechanical chassis for this mechanical deck. It is necessary to remember the attached position (one of **a** or **b**) and thickness (normal: 100μm) when removing the capstan motor because the set has its own attaching position and thickness.

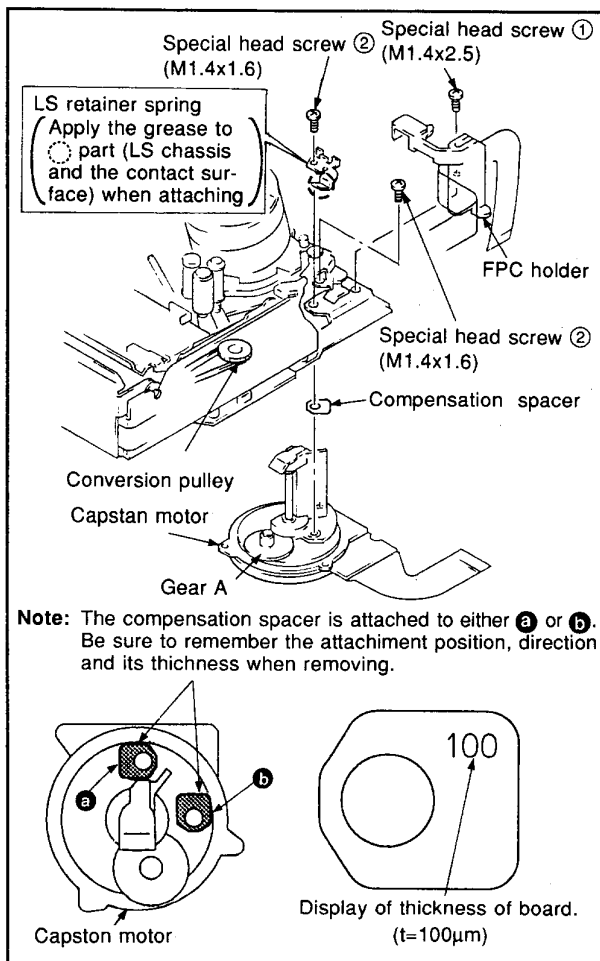
1. Removing

- 1) Set the **D. ON—EJ** mode.
- 2) Remove the screw ① to remove the FPC holder.
- 3) Remove the two of screw ② to remove the capstan motor.

Note: Not to lose the compensating spacer. Be sure to remember the attaching position and thickness.

2. Attaching

- 1) Set the **D. ON—EJ** mode.
 - 2) Put the compensating spacer on the capstan motor.
- Note:** Be sure to check that it is satisfied the same condition with when removing.
- 3) Engage the gear A and conversion pulley.
 - 4) Apply the grease (1.5 mm dia.) to the LS retainer spring.
Grease: Floil Grease (SG-941)
 - 5) Attach the capstan motor with two of screw ②.
Fixing torque: 0.0981 N · m (1 kg · cm)
 - 6) Attach the FPC holder with a screw ①.
Fixing torque: 0.0588 N · m (0.6 kg · cm)



3-10. LED BASE ASSEMBLY

1. Removing

- 1) Refer to 1-1. to lift the cassette compartment assembly.
- 2) Remove the LED holder, then remove the LED (FP-242).
- 3) Remove the screw, then remove the LED base assembly in the direction of arrow.

2. Attaching

- 1) Hook the three notches of LED base assembly to each slit on the shaft A, B and C, so that the LED (FP-242) is not inserted.

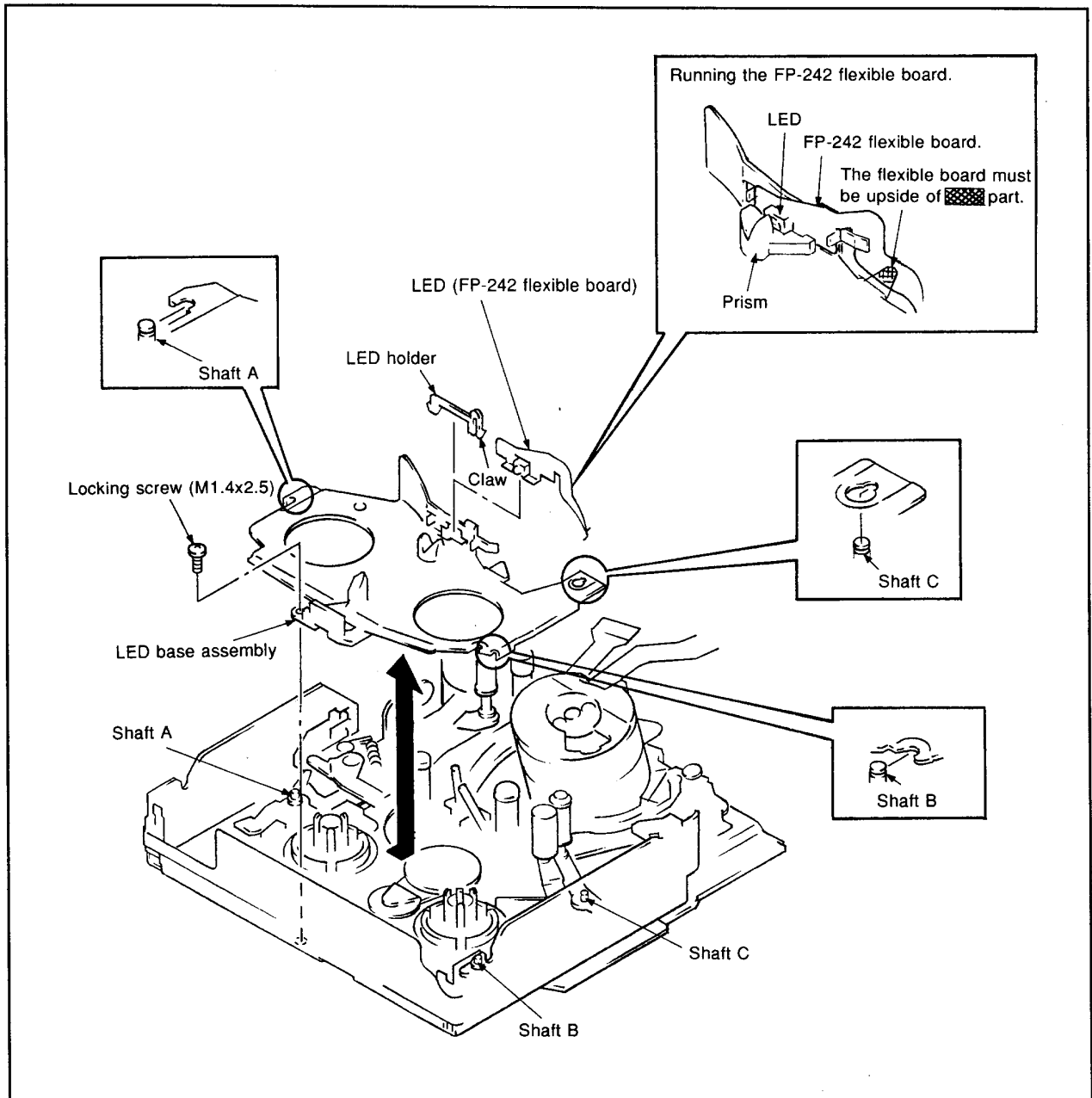
Note: Pay attention to your fingerprints and scratch.

- 2) Attach the screw and apply the screw lock (Ref No. J-20).
Fixing torque: $0.0588 \text{ N} \cdot \text{m}$ ($0.6 \text{ kg} \cdot \text{cm}$)

- 3) Put the LED (FP-242) in the space of prism, then remove the LED holder.

Note: Pay attention to pull around the FP-242.

- 4) Refer to 1-1. to attach the cassette compartment assembly.



3-11. TG7 ARM ASSEMBLY

1. Removing

- 1) Refer to 1-1. to remove the cassette compartment assembly.
- 2) Refer to 3-10. to remove the LED base assembly.
- 3) Set the **[EJ]** mode, and remove in order of TG7 arm assembly and torsion spring.
- 4) Refer to 3-5. to remove the TG7 guide.

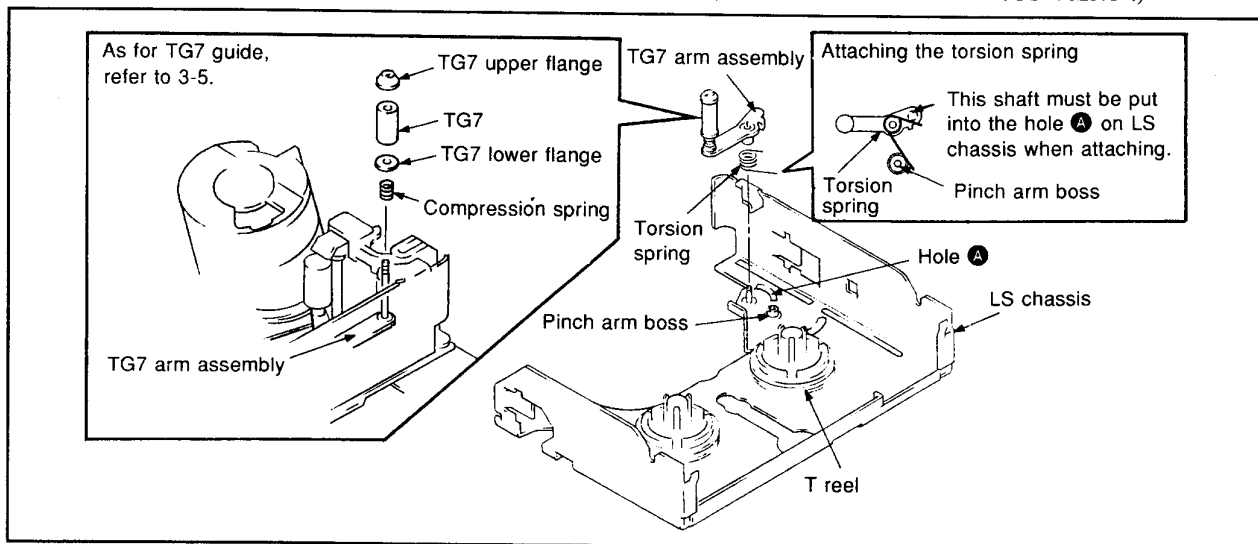
2. Attaching

- 1) Set the **[EJ]** mode.
- 2) Refer to 3-5. to attach the TG7 guide.
- 3) Attach in the order of torsion spring and TG7 arm assembly.

Note: Pay attention to attach the torsion spring.

- 4) Refer to 3-10. to attach the LED base assembly.
- 5) Refer to 1-1. to attach the cassette compartment assembly.
- 6) Refer to 2-2. to clean the TG7 guide.
- 7) Adjust the tape path.

(Refer to "4. TAPE PATH ADJUSTMENT".)



3-12. PINCH ARM ASSEMBLY

Note: When the pinch arm assembly is replaced, be sure to replace the extension spring together.

1. Removing

- 1) Refer to 1-1. to remove the cassette compartment assembly.
- 2) Refer to 3-10. to remove the LED base assembly.
- 3) Set the **[FF—RVS]** mode, remove the extension spring from the side of LS chassis, then remove the pinch arm assembly.

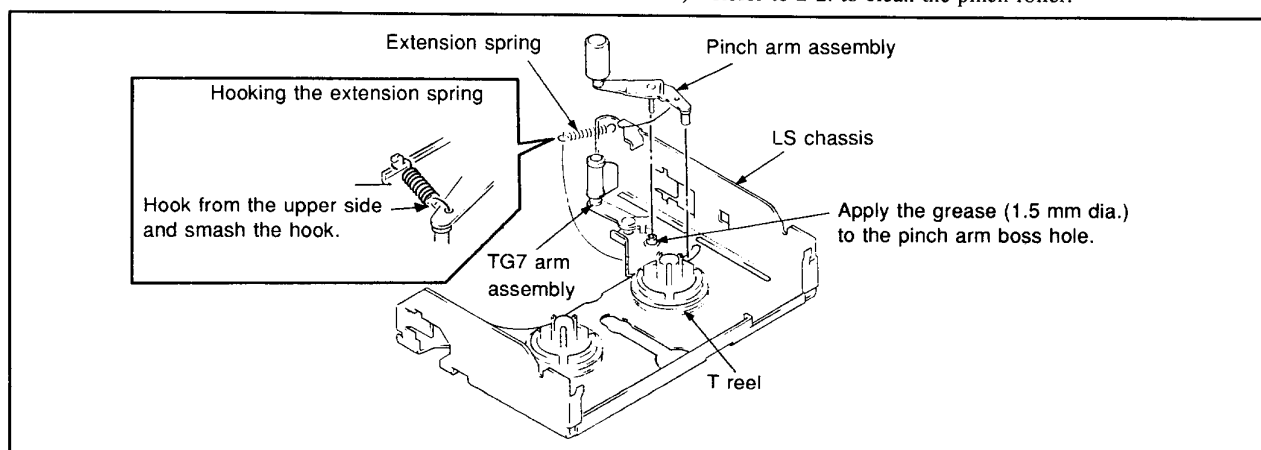
2. Attaching

- 1) Set the **[FF—RVS]** mode, apply the grease (1.5 mm dia.) to the pinch arm boss hole, attach the pinch arm assembly and hook the extension spring.

Grease: Floil Grease (SG-941)

Note: There is a specified direction of the spring hook.

- 2) Refer to 3-10. to attach the LED base assembly.
- 3) Refer to 1-1. to attach the cassette compartment assembly.
- 4) Refer to 2-2. to clean the pinch roller.



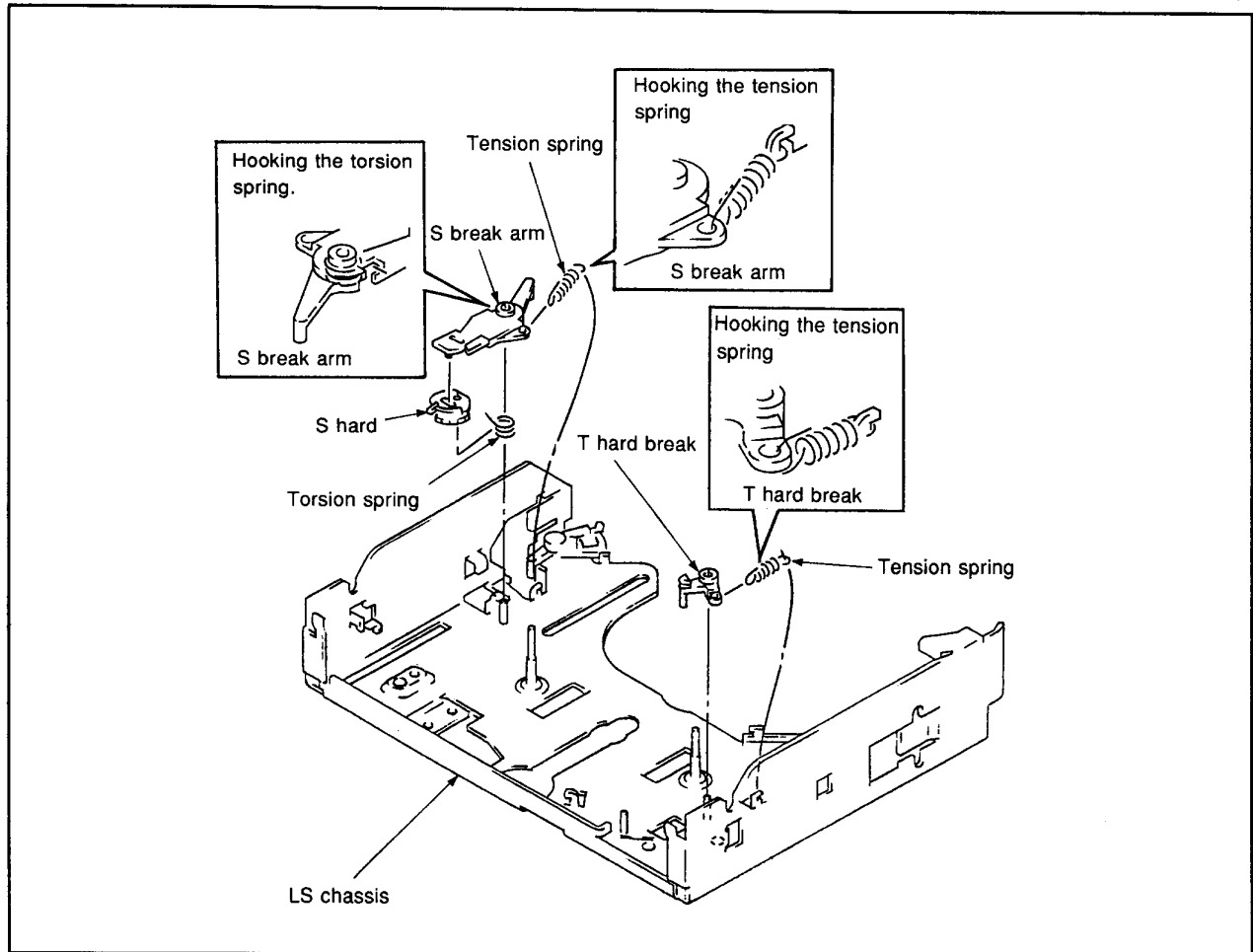
3-13. T HARD BREAK, S BREAK ARM AND S HARD

1. Removing

- 1) Refer to 1-1. to lift the cassette compartment assembly.
- 2) Refer to 3-10. to remove the LED base assembly.
- 3) Remove the tension spring from the side of LS chassis, then remove the T hard break, S break arm, torsion spring and S hard.

2. Attaching

- 1) Attach the S hard and torsion spring to the S break arm.
Note: Pay attention to attach the spring and S hard, and the hooking position of spring.
- 2) Hook each tension spring to the T hard break and S break arm, then attach each break to the LS chassis.
- 3) Hook the tension spring to the side of LS chassis.
- 4) Refer to 3-12. to attach the LED base assembly.
- 5) Refer to 1-1. to attach the cassette compartment assembly.



3-14. RVS BREAK AND LS CAM PLATE

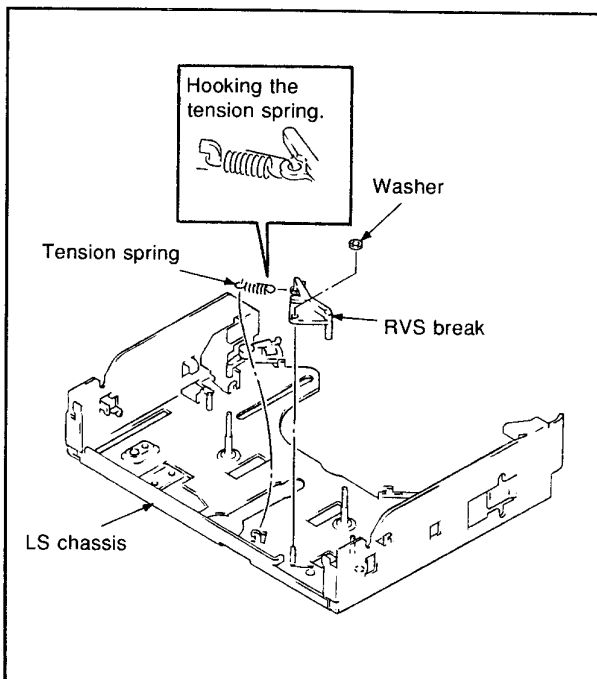
[RVS BREAK]

1. Removing

- 1) Refer to 1-1. to lift the cassette compartment assembly.
- 2) Refer to 3-10. to remove the LED base assembly.
- 3) After the washer is removed, remove the tension spring from the side of LS chassis, then remove the RVS break.

2. Attaching

- 1) Hook the tension spring to RVS break.
(There is a specified spring hook direction.)
- 2) Attach the RVS break with a washer to the LS chassis and hook the tension spring.
- 3) Refer to 3-10. to attach the LED base assembly.
- 4) Refer to 1-1. to attach the cassette compartment assembly.



[LS CAM PLATE]

1. Removing

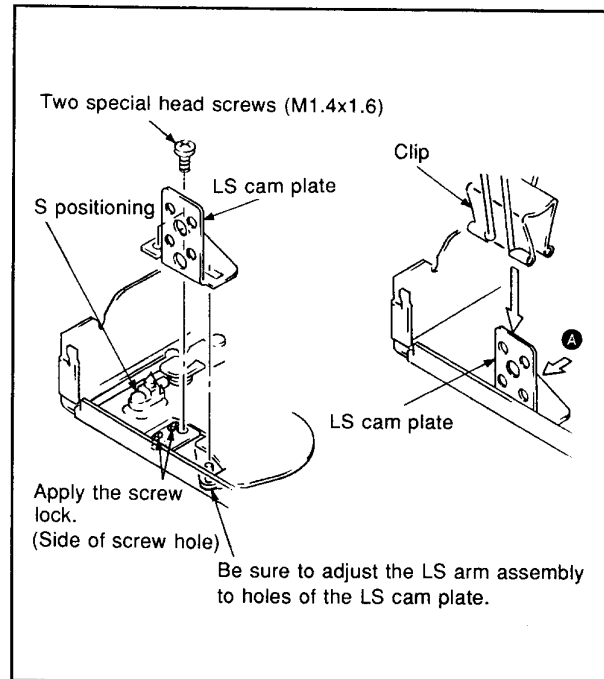
- 1) Refer to 1-1. to lift the cassette compartment assembly.
- 2) Refer to 3-10. to remove the LED base assembly.
- 3) Remove the two screws and remove the LS cam plate.

2. Attaching

- 1) Apply the lock screw (Ref No. J-20) (two positions), then fix the LS cam plate temporarily with two screws.
- 2) Set the **[RP]** mode, loosen the two screws, press in the direction of arrow **A**, clasp the LS cam plate and LS chassis with a clip etc., and fasten the screws tightly.

Fixing torque: 0.0981 N · m (1 kg · cm)

- 3) Refer to 3-10. to attach the LED base assembly.
- 4) Refer to 1-1. to attach the cassette compartment assembly.



3-15. TG7 ARM BLOCK ASSEMBLY AND TENSION REGULATOR BAND ASSEMBLY

When the TG7 arm block assembly is replaced, be sure to replace the extension spring together.

1. Removing

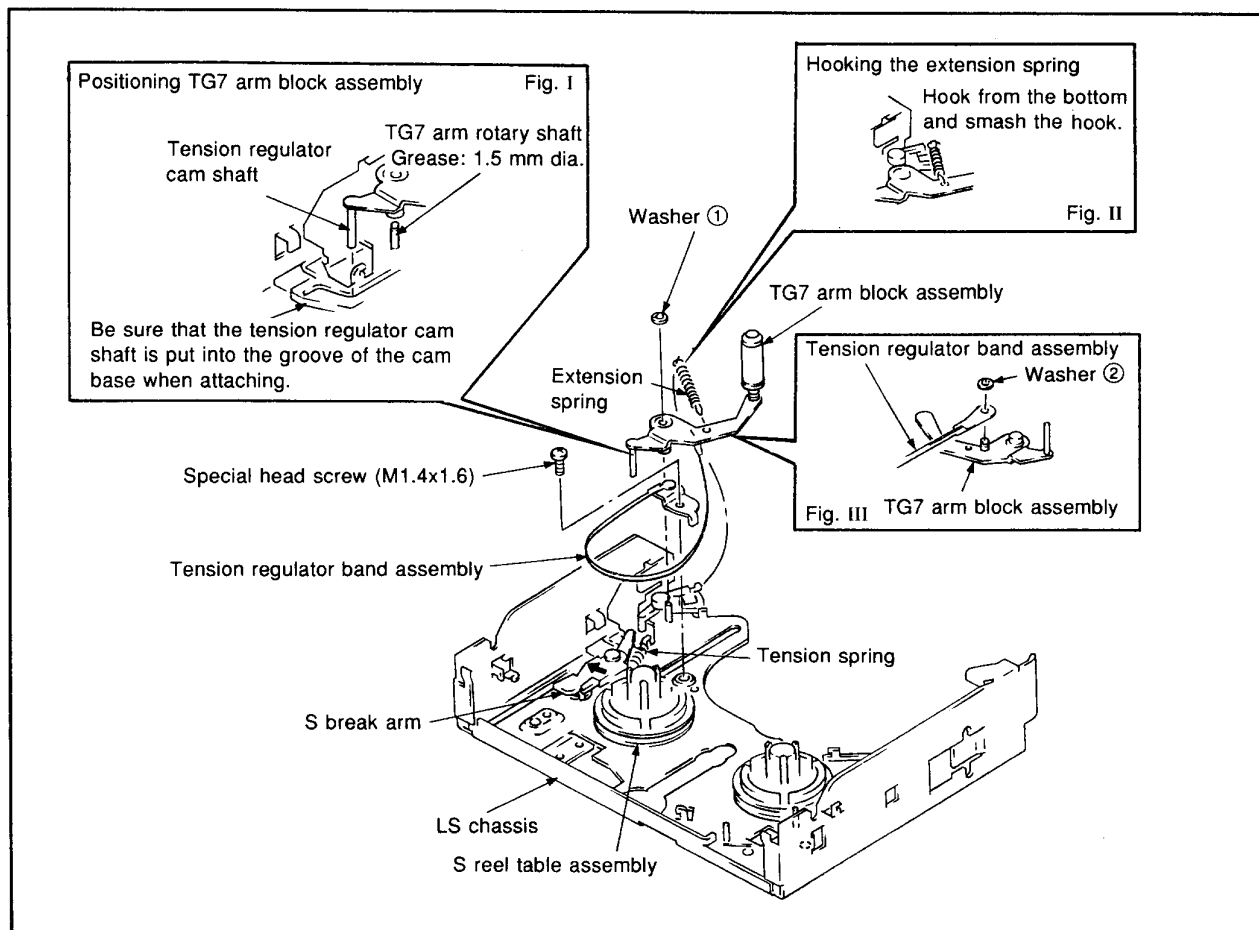
- 1) Refer to 1-1 to remove the cassette compartment assembly.
- 2) Refer to 3-10. to remove the LED base assembly.
- 3) Set the **[D. ON]** mode and check that the tension regulator band assembly is loose.
- 4) Remove the tension spring of S break arm (LS chassis side only), and keep away in the direction of arrow.
- 5) Remove the extension spring and a screw from the side of LS chassis, then remove the tension regulator band assembly.
- 6) Remove the washer ①, and remove the TG7 arm block assembly with the tension regulator band assembly together.
- 7) Remove the washer ②, and remove the tension regulator band assembly.
(Refer to the figure III.)

2. Attaching

- 1) Attach the tension regulator band assembly to the TG7 arm block assembly with the washer ②. And attach the extension spring to the arm block. (Refer to the figure II.)
Grease: Floil Grease (SG-941)

Note: There is a specified direction of the spring hook.

- 2) Set the **[D. ON]** mode, apply the grease (1.5 mm dia.) to the TG7 arm rotary shaft, then attach the TG7 arm block assembly to fit the groove of cam base and hook the extension spring. (Refer to the figure I.)
Grease: Floil Grease (SG-941)
- 3) Attach the washer ①.
- 4) Check the S break arm is slid in the direction of arrow, wind the tension regulator band to the S reel table assembly, then fix the tension regulator band assembly temporarily putting it to the side of S reel table assembly.
- 5) Hook the tension spring of S break arm to the LS chassis.
- 6) Refer to 3-10. to attach the LED base assembly.
- 7) Refer to 1-1. to attach the cassette compartment assembly.
- 8) Refer to 3-16. to adjust the position of FWD.
- 9) Refer to 3-17. to adjust the FWD back tension.
- 10) Refer to 3-18. to check the (RVS) torque on the reel table.



3-16. FWD POSITION ADJUSTMENT

Adjust the following items for replacement of the TG7 arm, tension regulator band, S reel table and others or removing parts of these.

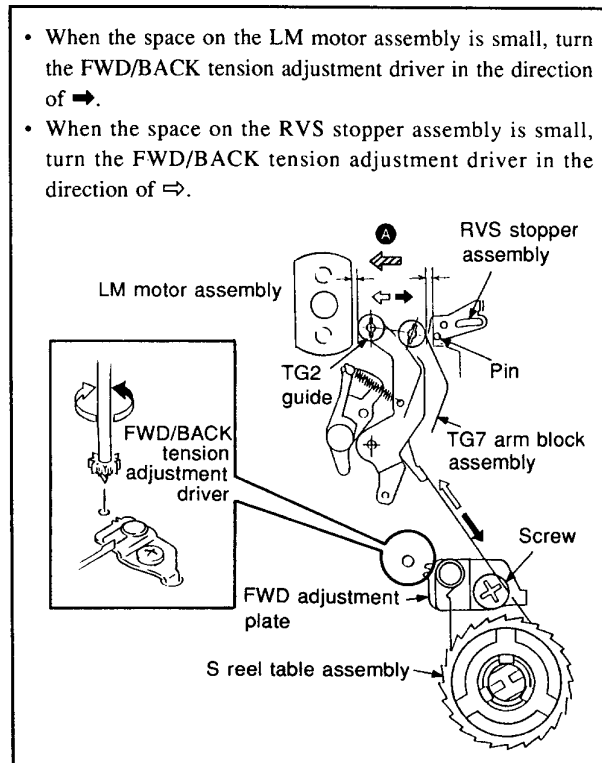
- FWD position adjustment
- FWD back tension adjustment (Refer to 3-17.)
- Reel table (RVS) torque check (Refer to 3-18.)

• Adjusting

- 1) Set the **[R/P]** mode, and check the position of TG2 guide.
- Make sure the space between TG2 guide and LM motor assembly and the space between TG2 guide and RVS stopper assembly's pin are equal (not to be hit to the guide and TG7 arm.).
- 2) Loosen the screw and move the TG2 guide with your fingers. Adjust the FWD adjustment plate with a FWD/BACK tension adjustment driver (Ref No. J-21), then fasten the screw tightly.

Fixing torque: $0.0588 \text{ N} \cdot \text{m}$ ($0.6 \text{ kg} \cdot \text{cm}$)

Note: Make sure there is enough space to move the TG2 in the direction of arrow **A**.

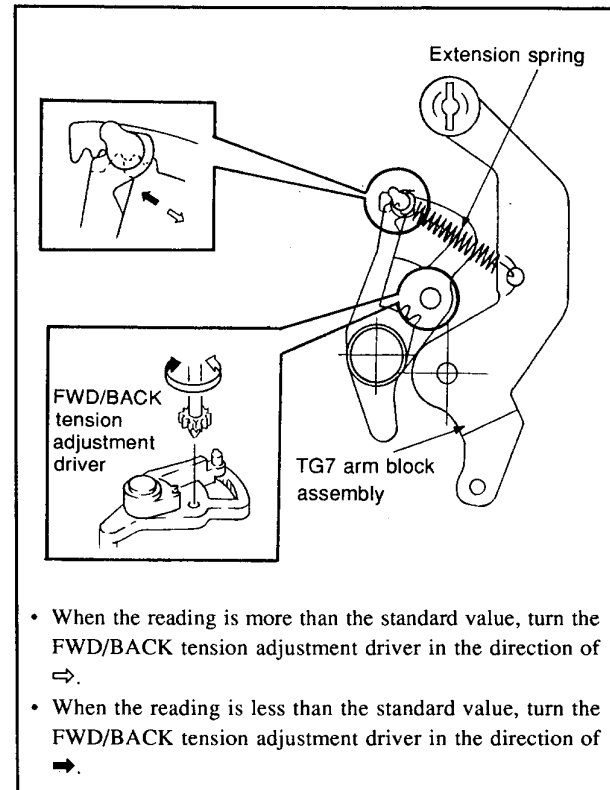


3-17. FWD BACK TENSION ADJUSTMENT

1. Adjusting

- 1) Set the FWD back tension cassette (Ref No. J-8).
 - 2) Set the **[REC]** mode, then check that the reading of S side is 0.417 to $0.490 \text{ mN} \cdot \text{m}$ (4.25 to $5 \text{ g} \cdot \text{cm}$) and the change is lower than $0.0490 \text{ mN} \cdot \text{m}$ ($0.5 \text{ g} \cdot \text{cm}$). If the reading is not satisfied the specification, adjust the followings.
- If the reading is higher than the specification (weaken the tension of spring)
Turn the adjusting screwdriver counterclockwise to satisfy the specification.
 - If the reading is lower than the specification (strengthen the tension of spring)
Turn the adjusting screwdriver clockwise to satisfy the specification.

Note: When the FWD/BACK tension adjustment driver is turned, take out the torque cassette once.



3-18. REEL TABLE TORQUE CHECK

• Adjusting

[FWD torque]

- 1) Set the FWD torque cassette (Ref No. J-7).
- 2) Set the FWD mode, then check that the torque value of the T reel table is 0.5393 to $1.258 \text{ mN} \cdot \text{m}$ (5.5 to $12.5 \text{ g} \cdot \text{cm}$) at the center value of deflection and the change is $0.0981 \text{ mN} \cdot \text{m}$ ($1.0 \text{ g} \cdot \text{cm}$).

[RVS torque]

- 1) Set the RVS torque cassette (Ref No. J-6).
- 2) Set the RVS mode (by using EDIT SEARCH (–) button), then check that the torque value of the S reel table is 1.0787 to $1.9613 \text{ mN} \cdot \text{m}$ (11.0 to $20.0 \text{ g} \cdot \text{cm}$) at the center value of deflection. **Note 1**

If the above values are not satisfied, check the position of FWD (tension regulator). Replace each reel table if there is no abnormal.

Note 1: Some speed of EDIT SEARCH is changed by double step due to strength of pressing. Select Normal speed (same as FWD) for the torque check.

3-19. T REEL TABLE ASSEMBLY

1. Removing

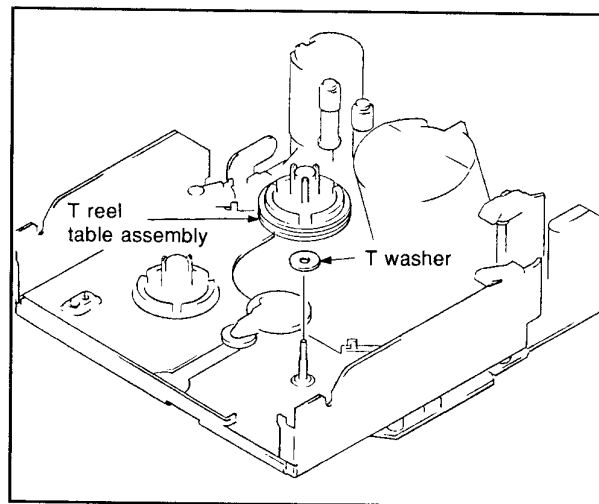
- 1) Refer to 1-1. to remove the cassette compartment assembly.
- 2) Refer to 3-10. to remove the LED base assembly.
- 3) Remove the T reel table assembly and T washer.

2. Attaching

- 1) Attach in the order of T washer and T reel table assembly.

Note: For attaching the T reel table assembly, perform “3-21. HEIGHT ADJUSTMENT FOR EACH REEL TABLE”.

- 2) Refer to 3-10. to attach the LED base assembly.
- 3) Refer to 1-1. to attach the cassette compartment assembly.
- 4) Refer to 3-18. to check the torque of the reel table.



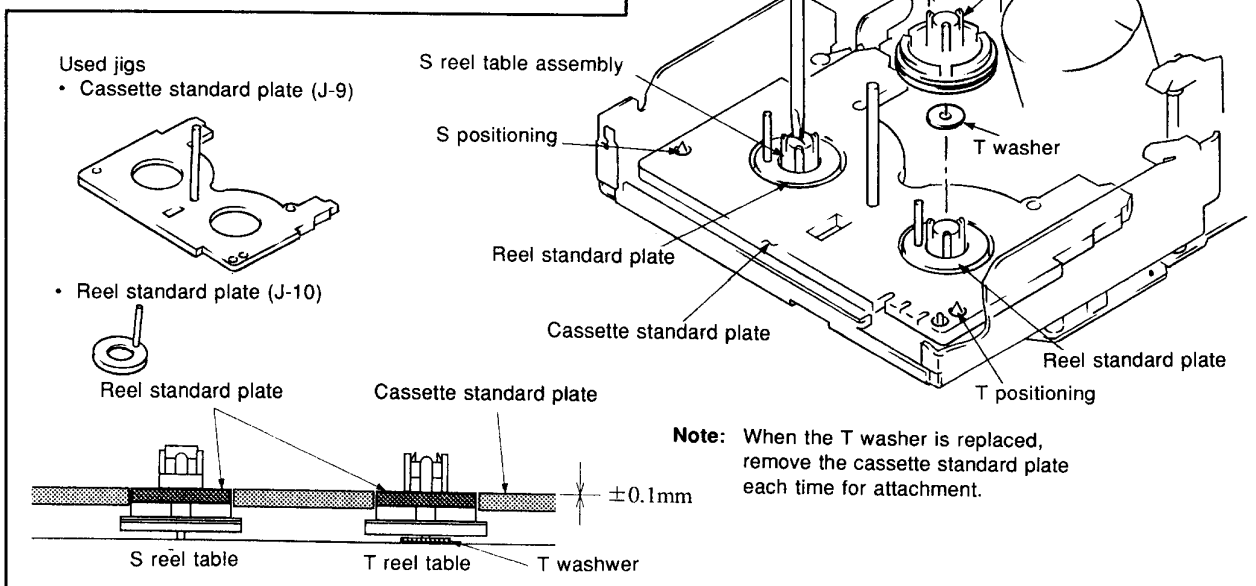
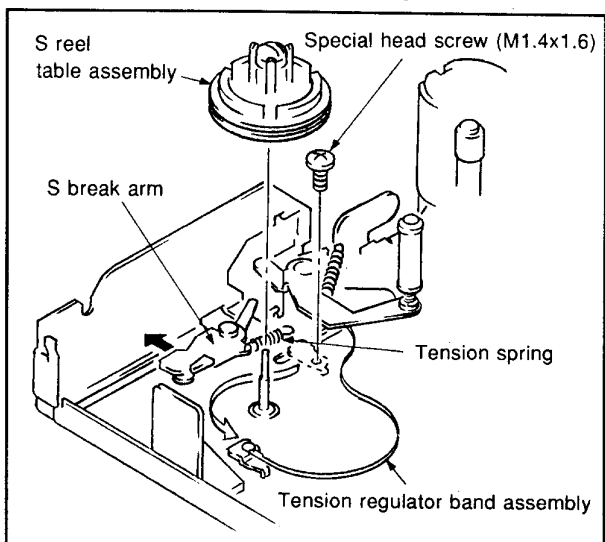
3-20. S REEL TABLE ASSEMBLY

1. Removing

- 1) Refer to 1-1. to remove the cassette compartment assembly.
- 2) Refer to 3-10. to remove the LED base assembly.
- 3) Remove the tension spring of the S break arm (LS chassis side only), and keep away in the direction of arrow.
- 4) Remove the screw and the tension regulator band assembly, then remove the S reel table assembly.

2. Attaching

- 1) Attach the S reel table assembly.
- 2) Set the **[D. ON]** mode, fix the tension regulator band assembly temporarily, and hook the tension spring. (There is a specified spring direction. (Refer to 3-13.))
- 3) Refer to 3-21. to adjust the height and tilt of each reel table.
- 4) Refer to 3-10. to attach the LED base assembly.
- 5) Refer to 1-1. to attach the cassette compartment assembly.
- 6) Refer to 3-16 to adjust the position of FWD.
- 7) Refer to 3-17. to adjust the FWD back tension.
- 8) Refer to 3-18. to check the reel's torque.

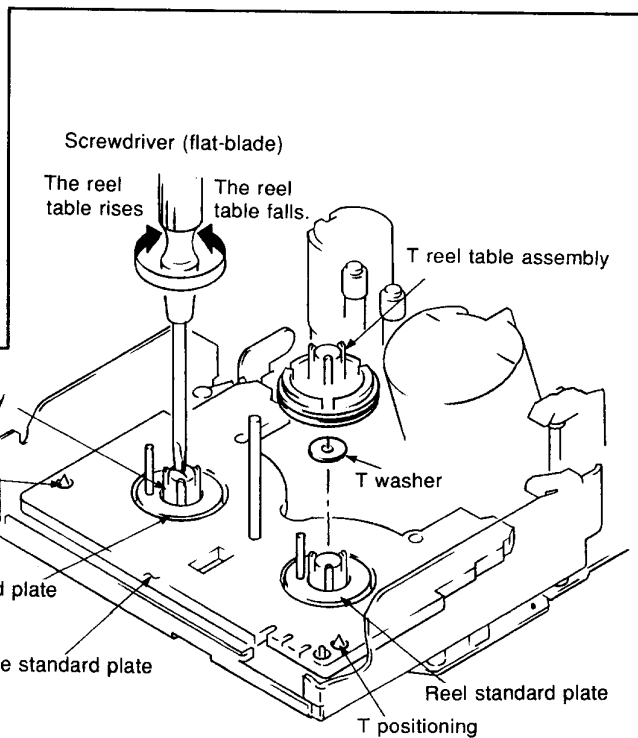


3-21. HEIGHT ADJUSTMENT FOR EACH REEL TABLE

Note: In either case one side of reel table adjustment is aimed, adjust both sides of reel table.

• Adjusting

- 1) Refer to 1-1. to lift the cassette compartment assembly.
 - 2) Set the **[R/P]** mode. Put the cassette standard plate (Ref No. J-9), turn the S reel table counterclockwise with a screwdriver (flat blade) to let down the reel table, and check that the cassette standard plate is not unstable. Be sure to remove the T reel table then.
 - 3) Put the reel standard plate (Ref No. J-10) to adjust the S reel table with a screwdriver (flat blade), then adjust the height of the cassette standard plate and reel standard plate. (Height: ± 0.1 mm, tilt: should be parallel)
 - 4) Adjust the S reel table. Attach in the order of T reel table, cassette standard plate and reel standard plate to adjust the height and azimuth. (Height: ± 0.1 mm, tilt: should be parallel)
- If not satisfied the specification, replace the T washer. (T reel side only)
- Yellow: 0.1 mm
Green: 0.25 mm
Black: 0.35 mm
- 5) Refer to 3-10. to attach the LED base assembly.
 - 6) Refer to 1-1. to attach the cassette compartment assembly.



Note: When the T washer is replaced, remove the cassette standard plate each time for attachment.

3-22. LS CHASSIS BLOCK ASSEMBLY, GOOSENECK ASSEMBLY, RELAY GEAR, LOCK SLIDER, COMPULSION ARM ASSEMBLY, CAM SLIDER AND PINCH RELEASE ARM

1. Removing

- 1) Refer to 1-1. to remove the cassette compartment assembly.
- 2) Refer to 3-10. to remove the LED base assembly.
- 3) Remove the screw ① and remove the FPC holder.
- 4) Set the **[S. OFF]** mode.
- 5) Remove the washer to remove the gooseneck assembly and relay gear.
- 6) Remove the tension spring on the side of LS chassis and remove the lock slider in the direction of arrow.
- 7) Set the **[D. ON]** mode, remove the two of screw ②, then set the **[S. OFF]** mode.

Note: Do not remove the cam slider from the LS chassis except the replacement.

- 8) Remove the two of screw ③ and remove the LS chassis block assembly.

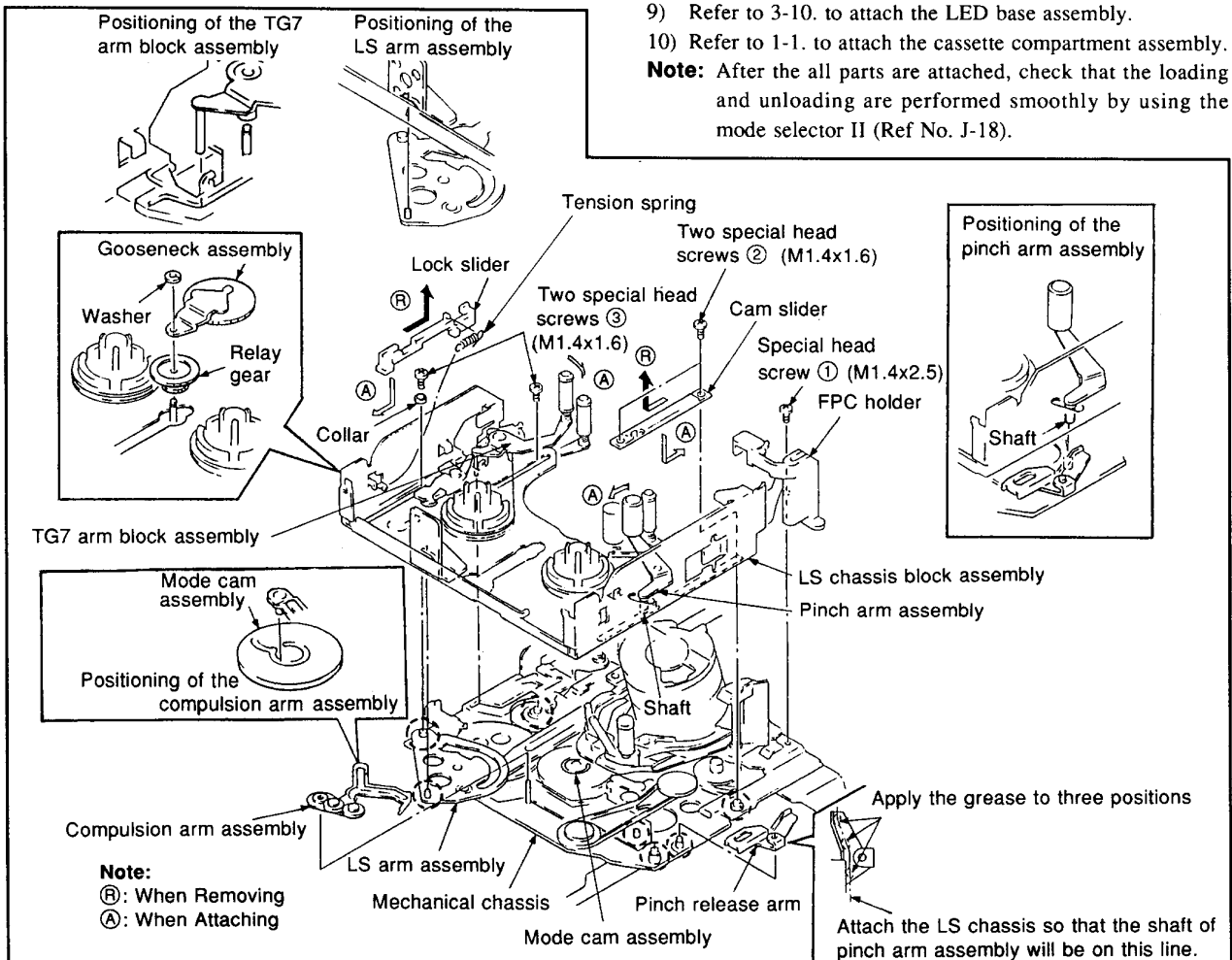
Note: When removing the LS chassis block assembly, remove it pressing the TG7 arm block assembly not to give a shock to the tension regulator band. (Remove it pressing the pinch arm as well.)

- 9) Remove the compulsion arm assembly and pinch release arm.

2. Attaching


- 1) Set the **[S. OFF]** mode.
 - 2) Apply the grease (seven positions, 3 mm dia.) to the mechanical chassis and LS arm assembly.
Grease: Floil Grease (SG-941)
 - 3) Attach the compulsion arm assembly and pinch release arm.
 - 4) Apply the grease (three positions, 3 mm dia.) to the pinch release arm, then put the LS chassis block assembly.
- Note:** Pay attention to adjust each position of the LS arm assembly, TG7 arm block assembly and pinch arm assembly.
- 5) Attach in the order of two of screw ③ (do not forget to put in the collar), lock slider and tension spring.
Fixing torque: 0.0981 N · m (1 kg · cm)
 - 6) Set the **[D. ON]** mode, attach the cam slider (pay attention to the direction for attaching) and two of screw ②.
Fixing torque: 0.0981 N · m (1 kg · cm)
 - 7) Attach the gooseneck assembly with a relay gear and a washer.
 - 8) Attach the FPC holder with a screw ①.
Fixing torque: 0.0588 N · m (0.6 kg · cm)
 - 9) Refer to 3-10. to attach the LED base assembly.
 - 10) Refer to 1-1. to attach the cassette compartment assembly.

Note: After the all parts are attached, check that the loading and unloading are performed smoothly by using the mode selector II (Ref No. J-18).

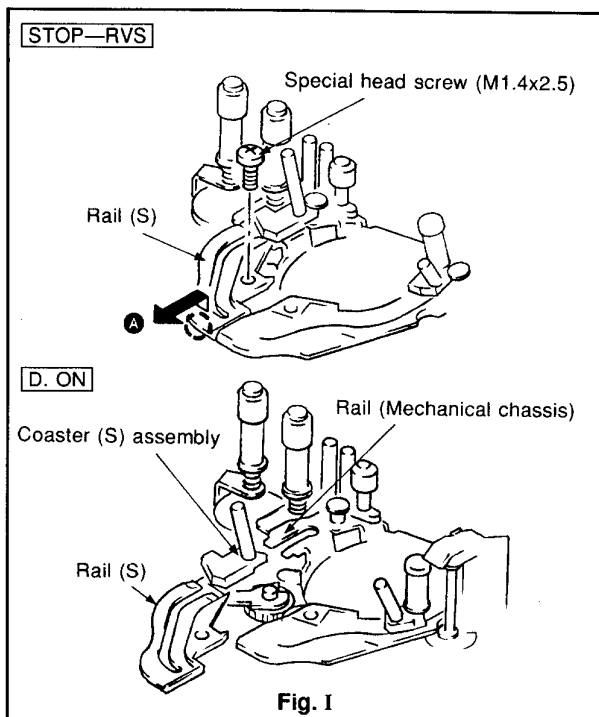


3-23. GL (S) BLOCK ASSEMBLY (COASTER (S) ASSEMBLY, GL (S) ASSEMBLY AND RAIL (S))

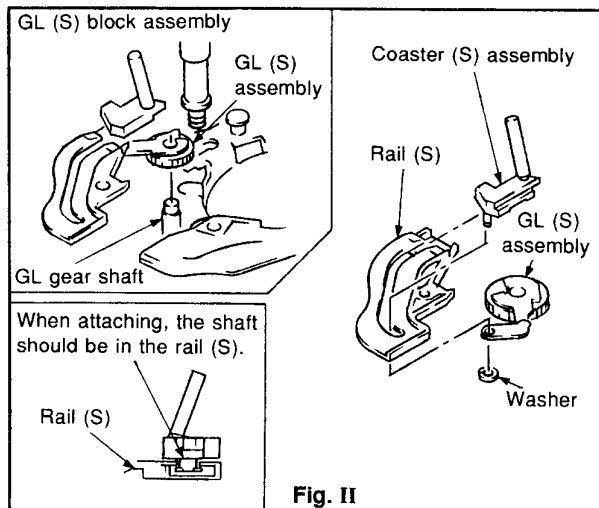
1. Removing

- 1) Refer to 1-1. to remove the cassette compartment assembly.
- 2) Refer to 3-10. to remove the LED base assembly.
- 3) Refer to 3-22. to remove the gooseneck assembly and LS chassis block assembly.
- 4) Refer to 3-1. to remove the drum assembly.
- 5) Set the **[STOP—RVS]** mode.
- 6) Remove the screw, pick up the  part, slide the rail (S) in the direction of arrow **A**, and set the **[D. ON]** mode.

Note: Check that the coaster (S) assembly is removed from the rail of mechanical chassis then.



- 7) Pick up and remove the GL (S) assembly.
- 8) Remove the washer and remove each parts.



2. Attaching

- 1) Attach the coaster (S) assembly to the rail (S), then attach the GL (S) assembly. (Refer to the figure II)

Note: Pay attention to the direction of each parts' attachment.

- 2) Set the **[S. OFF]** mode.

Note: The **[S. OFF]** mode is the condition that all phase are matched as far as it is not abnormal. If there is a difference of phase, refer to "3-30. EACH GEAR AND MODE CAM ASSEMBLY PHASE ADJUSTMENT" to adjust the phase.

- 3) Apply the grease (1.5 mm dia.) to the GL gear shaft and attach the GL (S) assembly so that the each phase meets the LS arm assembly and GL (T) assembly.

Grease: Floil Grease (SG-941)

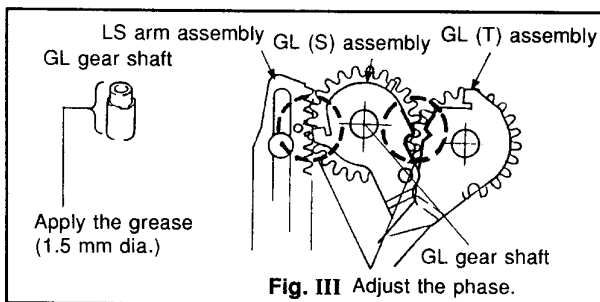


Fig. III Adjust the phase.

- 4) Put the coaster (S) assembly to the rail of mechanical chassis by using the mode selector II (Ref No. J-18).

Note: Press the mode selector's button by instalments adjusting the direction of the coaster (S) assembly.

Mode display: **[S. OFF]** — **[STOP—RVS]**

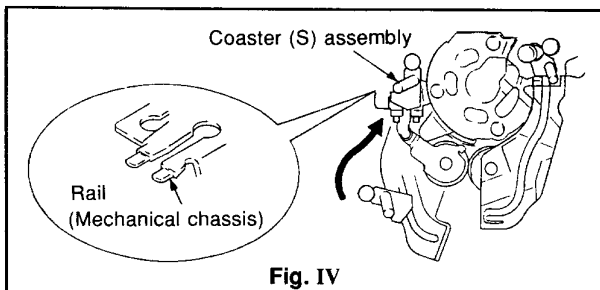


Fig. IV

- 5) Attach the rail (S) to the rail of mechanical chassis and GL gear shaft in order, and fasten the screw.

Fixing torque: 0.00588 N · m (0.6 kg · cm)

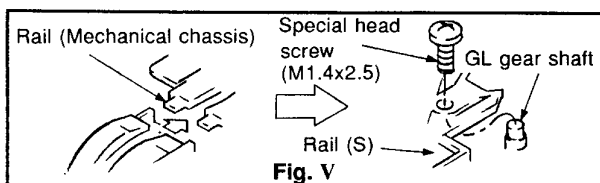



Fig. V

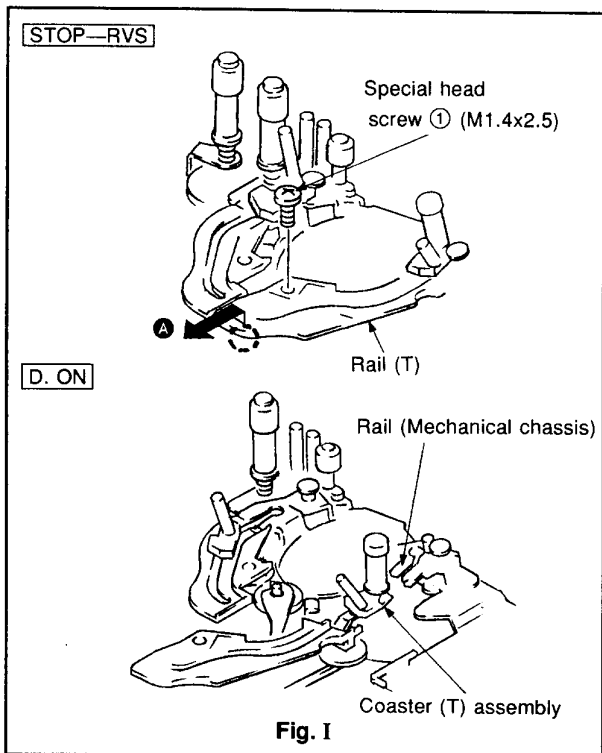
- 6) Refer to 3-1. to attach the drum assembly.
- 7) Refer to 3-22. to attach the gooseneck assembly and LS chassis block assembly.
- 8) Refer to 3-10. to attach the LED base assembly.
- 9) Refer to 1-1. to attach the cassette compartment assembly.

3-24. GL (T) BLOCK ASSEMBLY (COASTER (T) ASSEMBLY, GL (T) ASSEMBLY, RAIL (T) AND TG5 ASSEMBLY)

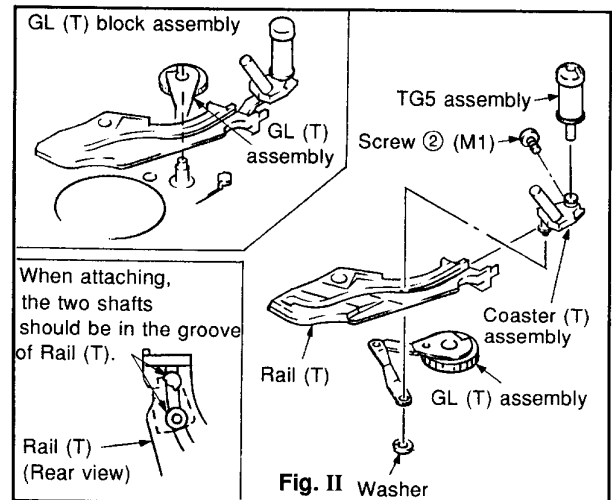
1. Removing

- 1) Refer to 1-1. to remove the cassette compartment assembly.
- 2) Refer to 3-10. to remove the LED base assembly.
- 3) Refer to 3-22. to remove the gooseneck assembly and LS chassis block assembly.
- 4) Refer to 3-9. to remove the capstan motor.
- 5) Refer to 3-1. to remove the drum assembly.
- 6) Set the **STOP-RVS** mode.
- 7) Remove the screw ①, pick up the  part, remove the rail (T) in the direction of arrow **A**, then set the **D. ON** mode.

Note: Check that the coaster (T) assembly is removed from the rail of mechanical chassis then.



- 8) Pick up the GL (T) assembly with a pair of tweezers (a pincette) and remove.
- 9) Remove a washer and a screw ②, then remove each parts.



2. Attaching

- 1) Fix temporarily the TG5 assembly with a screw ② to the coaster (T) assembly. (Refer to the figure II)

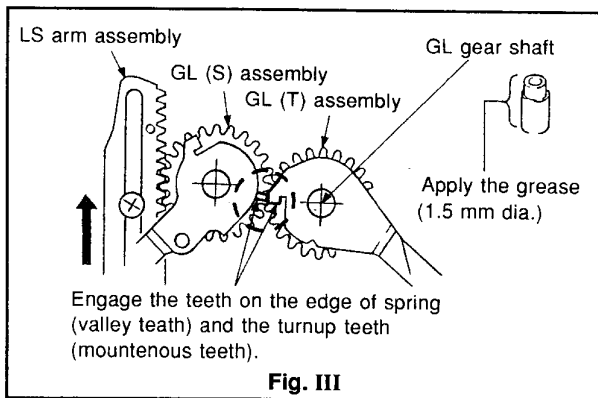
Fixing torque: $0.0490 \text{ N} \cdot \text{m}$ ($0.5 \text{ kg} \cdot \text{cm}$)

- 2) Attach the coaster (T) assembly to the rail (T), then attach the GL (T) assembly. (Refer to the figure II)

Note: Pay attention to the direction of each parts' attachment.

- 3) Apply the grease (1.5 mm dia.) to the GL gear shaft and attach the GL (T) assembly so that the each phase meets the GL (S) assembly.

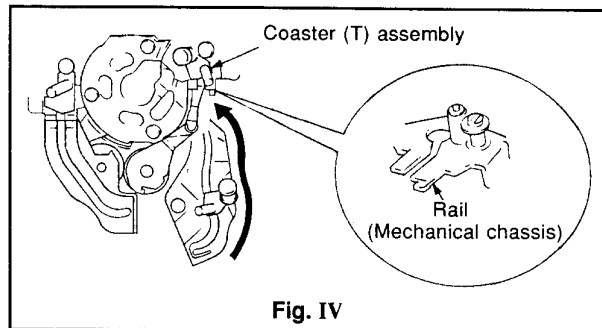
Note: After the attachment, set the **[S. OFF]** mode to check the phase.



- 4) Put the coaster (T) assembly into the rail of mechanical chassis by using the mode selector II (Ref No. J-18).

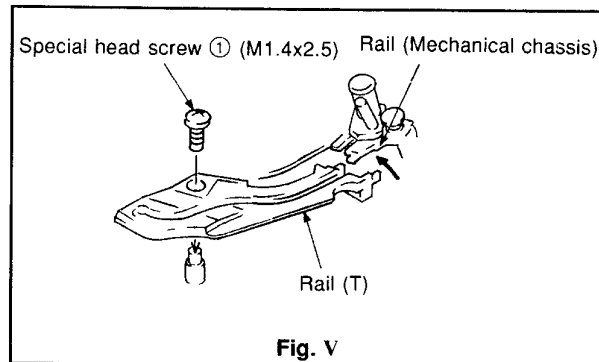
Note: Press the mode selector's button by instalments adjusting the direction of the coaster (T) assembly.

Mode display: **[S. OFF]** — **[STOP—RVS]**



- 5) Attach the rail (T) to the rail of mechanical chassis and GL gear shaft with a screw ① in order.

Fixing torque: $0.0588 \text{ N} \cdot \text{m}$ ($0.6 \text{ kg} \cdot \text{cm}$)



- 6) Attach the TG5 preset base (Ref No. J-13) and adjust the azimuth and height of the TG5 guide.

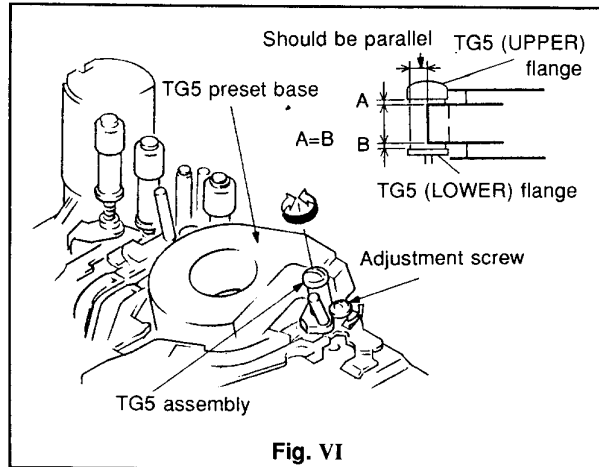
- Azimuth adjustment

Turn the gate adjustment screw and adjust parallel to jigs.

- Height adjustment

Turn the TG5 assembly so that the space between the jig and the TG5 (upper) flange is equal to the space between the jig and the TG5 (lower) flange. ($A=B$)

- 7) Rotate the adjustment screw in a 60-degree arc counterclockwise.



- 8) Refer to 4-2. to adjust the tracking.
- 9) Refer to 3-1. to attach the drum assembly.
- 10) Refer to 3-9. to attach the capstan motor.
- 11) Refer to 3-22. to attach the gooseneck assembly and LS chassis block assembly.
- 12) Refer to 3-10. to attach the LED base assembly.
- 13) Refer to 1-1. to attach the cassette compartment assembly.

3-25. MODE CAM ASSEMBLY AND FP-245 FLEXIBLE BOARD

1. Removing

- 1) Refer to 1-1 to remove the cassette compartment assembly.
- 2) Refer to 3-10. to remove the LED base assembly.
- 3) Refer to 3-22. to remove the gooseneck assembly, LS chassis block assembly and reform arm assembly.
- 4) Set the **STOP—RVS** mode.
- 5) Remove the screw ① and keep away from the rail (S).
- 6) Remove a screw ② and two of screw ③, then remove the mode cam assembly and FP-245 flexible board.

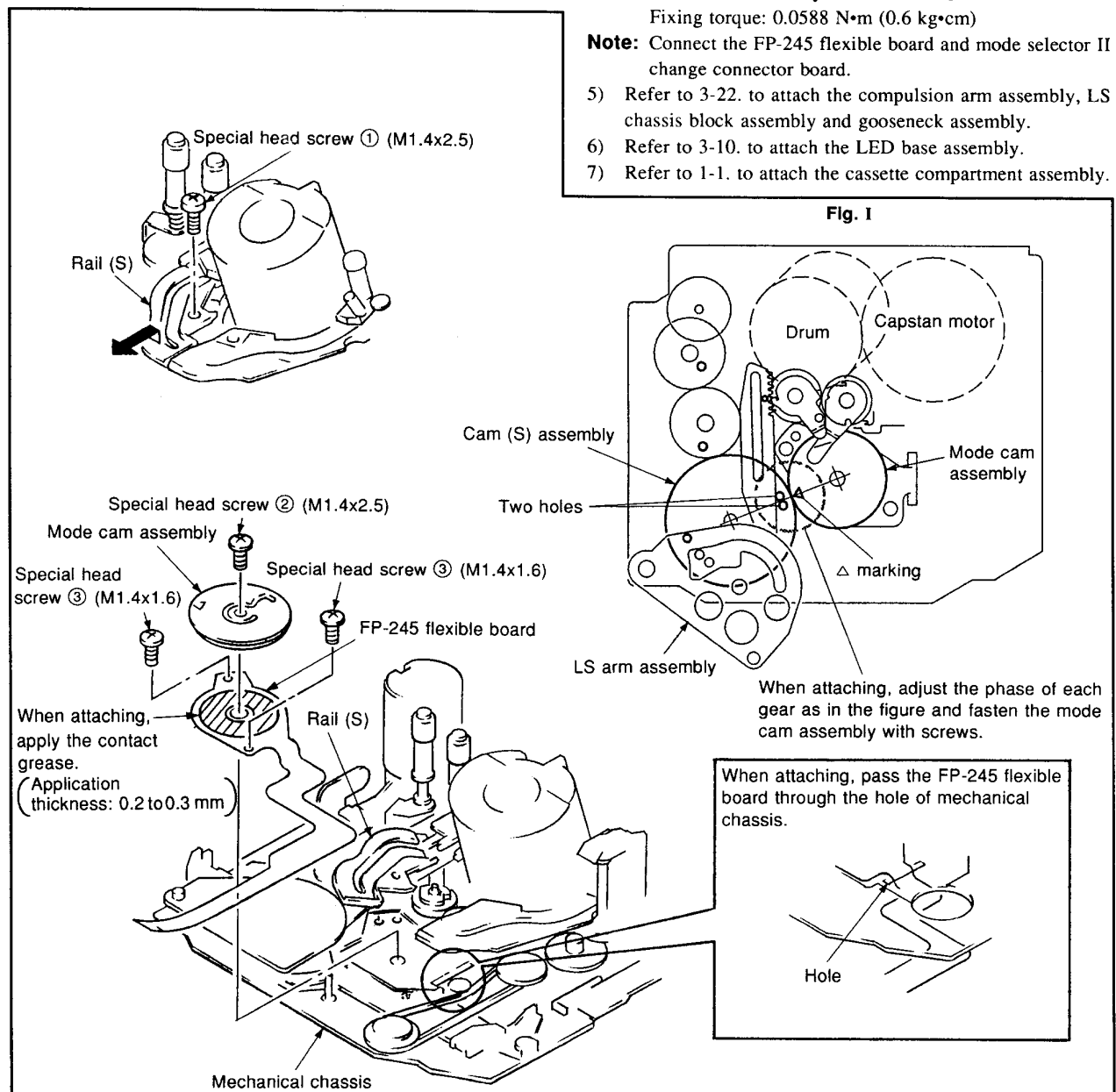
Note: Pay attention the FP-245 flexible board is connected to the mode selector II change connector board (Ref No. J-19).

2. Attaching

- 1) Attach the FP-245 flexible board with two of screw ③ and apply the contact grease to a pattern.
Fixing torque: 0.0981 N•m (1 kg•cm)
Thickness application of grease: 0.2 to 0.3 mm (A little overflow is no problem.)
- 2) Put the mode cam assembly on the fitting shaft. (Do not fasten with a screw.)
- 3) Attach the rail (S) with a screw ① and load by using the mode selector II as in the figure I. (Condition: the phase of each gear is matched. **S. OFF** mode.)
Fixing torque: 0.0588 N•m (0.6 kg•cm)
- 4) Pay attention to the phase with the cam (S) assembly. Fix the mode cam assembly with a screw ②.
Fixing torque: 0.0588 N•m (0.6 kg•cm)

Note: Connect the FP-245 flexible board and mode selector II change connector board.

- 5) Refer to 3-22. to attach the compulsion arm assembly, LS chassis block assembly and gooseneck assembly.
- 6) Refer to 3-10. to attach the LED base assembly.
- 7) Refer to 1-1. to attach the cassette compartment assembly.



3-26. LS ARM ASSEMBLY, EJ ARM AND CAM (S) ASSEMBLY

1. Removing

- 1) Refer to 1-1. to remove the cassette compartment assembly.
- 2) Refer to 3-1. to remove the drum assembly.
- 3) Refer to 3-10. to remove the LED base assembly.
- 4) Refer to 3-22 to remove the gooseneck assembly and LS chassis block assembly.
- 5) Refer to 3-23. to remove the GL (S) block assembly.
- 6) Set the **[S. OFF]** mode, remove the screw ①, then remove the LS arm assembly.
- 7) Remove in the order of tension spring and screw ② from the side of LS chassis, then remove the EJ arm and cam (S) assembly.

2. Attaching

- 1) Check the **[S. OFF]** mode and apply the grease (three positions, 1.5 mm dia.) to the mechanical chassis.

Grease: Floil Grease (SG-941)

Note: **[S. OFF]** mode is the condition that the phase of each gear is matched.

- 2) Apply the grease (○: two positions, 1.5 mm dia.) into a long hole of the cam (S) assembly, attach it with attention to the phase.

Grease: Floil Grease (SG-941)

- 3) Apply the grease (1.5 mm dia.) into a long hole of the EJ arm. Attach it with a screw ② and hook the tension spring.

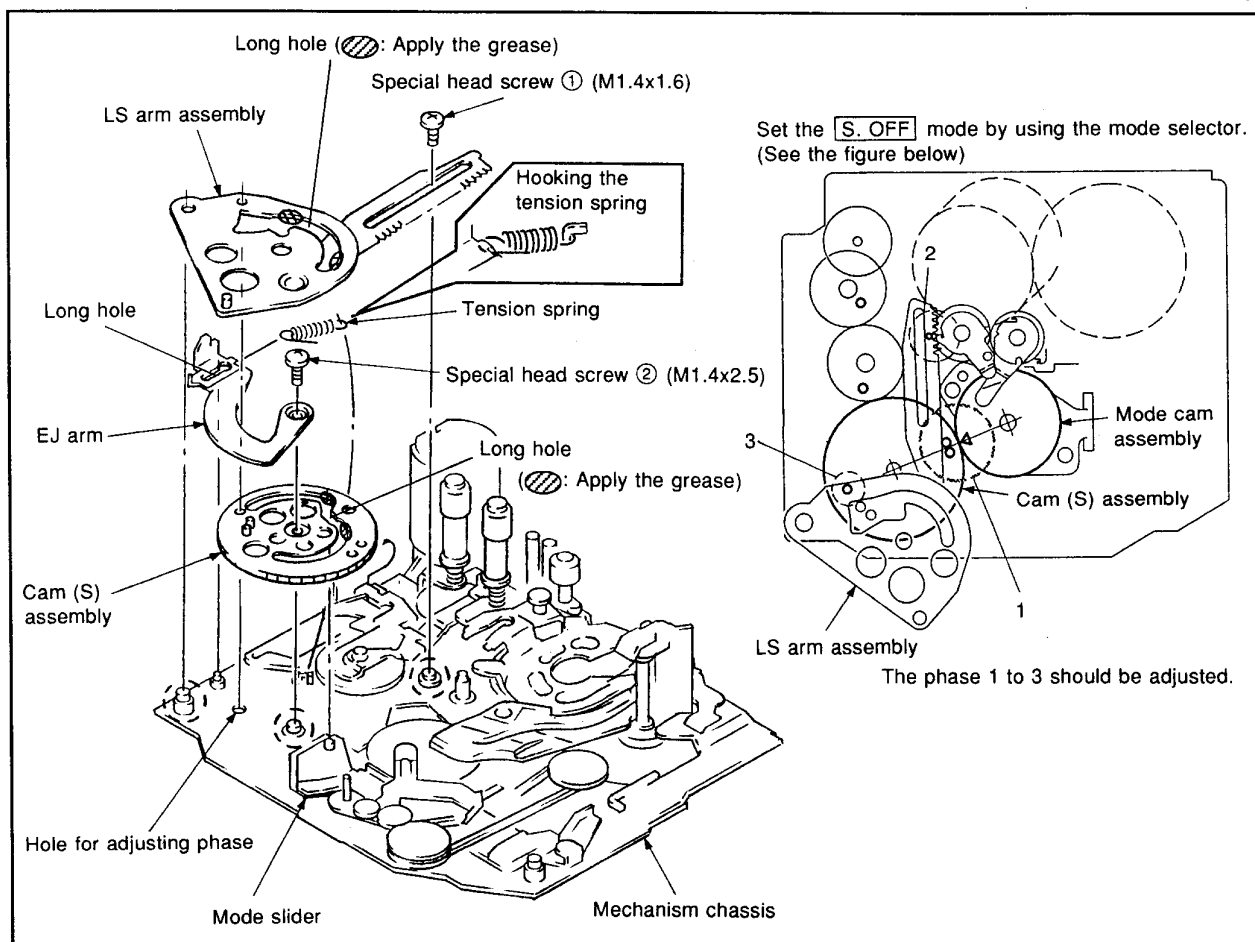
Fixing torque: 0.0981 N·m (1 kg·cm)

Note: There is a specified direction of the spring hook.

- 4) Apply the grease (two positions, 1.5 mm dia.) into a long hole of the LS arm assembly. Pay attention to the phase with the cam (S) assembly and mode slider, and attach with a screw ①.

Fixing torque: 0.0981 N·m (1 kg·cm)

- 5) Refer to 3-23 to attach the GL (S) block assembly.
- 6) Refer to 3-22. to attach the LS chassis block assembly and gooseneck assembly.
- 7) Refer to 3-10. to attach the LED base assembly.
- 8) Refer to 3-1. to attach the drum assembly.
- 9) Refer to 1-1. to attach the cassette compartment assembly.



3-27. ADJUSTMENT ARM ASSEMBLY, RELAY BELT, RELAY PULLEY ASSEMBLY AND CONVERSION PULLEY ASSEMBLY

1. Removing

- 1) Refer to 1-1. to remove the cassette compartment assembly.
- 2) Refer to 3-10. to remove the LED base assembly.
- 3) Refer to 3-22. to remove the gooseneck assembly, LS chassis block assembly and reform arm assembly.
- 4) Remove in the order of tension spring and a screw from the side of mechanical chassis, then remove the adjustment arm assembly.

Note: Remove the spring from the rear of mechanical chassis.

- 5) Remove the relay belt and washers, then remove the relay pulley assembly and conversion pulley assembly.

2. Attaching

- 1) Hook the tension spring to the side of LS chassis, then fix temporarily the adjustment arm assembly at the position in the figure I.

Note: There is a specified direction of the spring hook.

- 2) Apply one quarter drop oil to the shaft A and B each. (part Oil: NT68)

- 3) Attach the relay pulley assembly and conversion pulley assembly with each washer, then hook the relay belt. (Pay attention to a torsion in a belt).

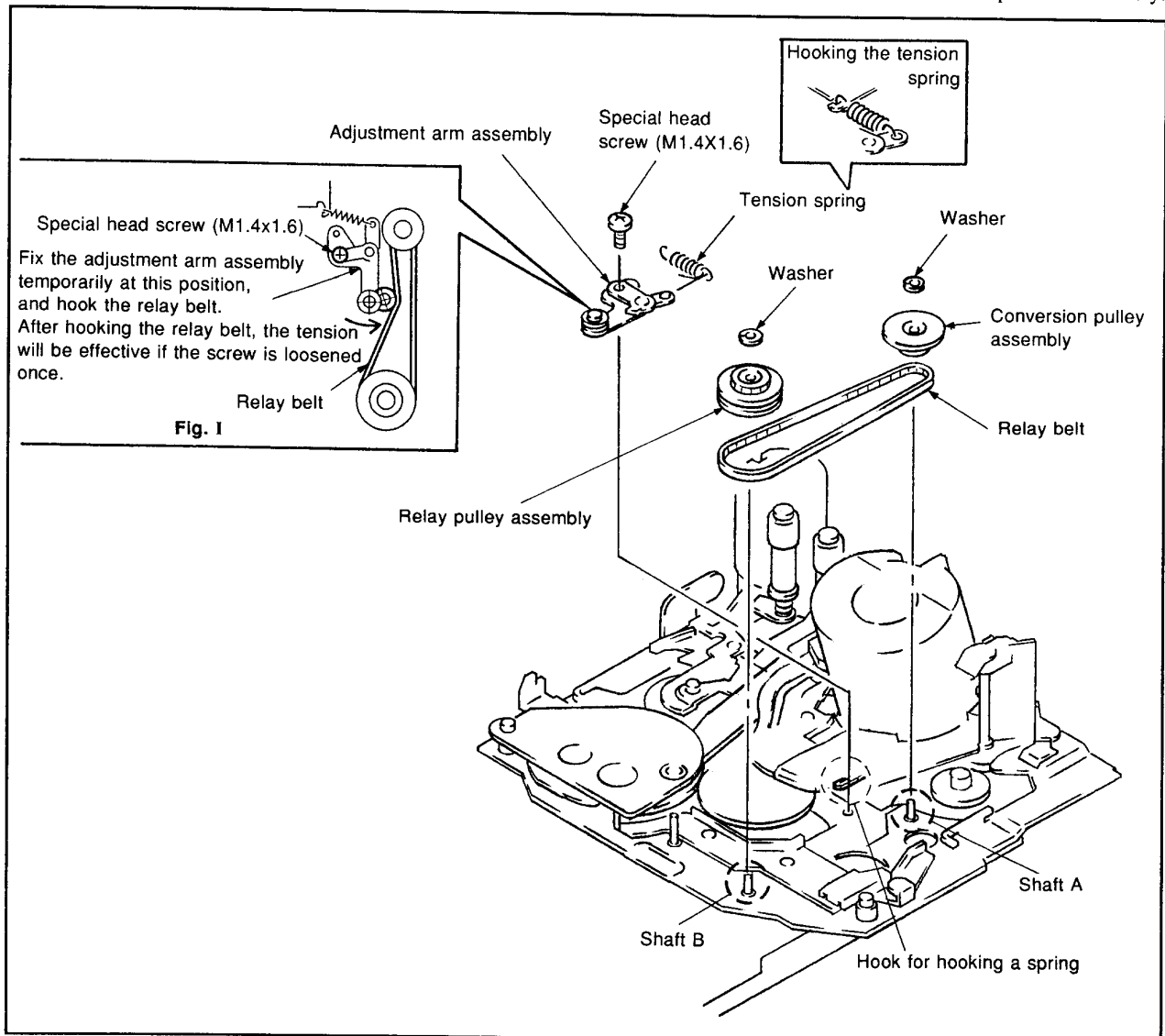
- 4) Loosen the screw, check a tension to the relay belt, and fasten the screw tightly. (Refer to the figure I.)

Fixing torque: $0.0981 \text{ N} \cdot \text{m}$ (1 kg \cdot cm)

- 5) Refer to 3-22. to attach the compulsion arm assembly, LS chassis block assembly and gooseneck assembly.

- 6) Refer to 3-10. to attach the LED base assembly.

- 7) Refer to 1-1. to attach the cassette compartment assembly.




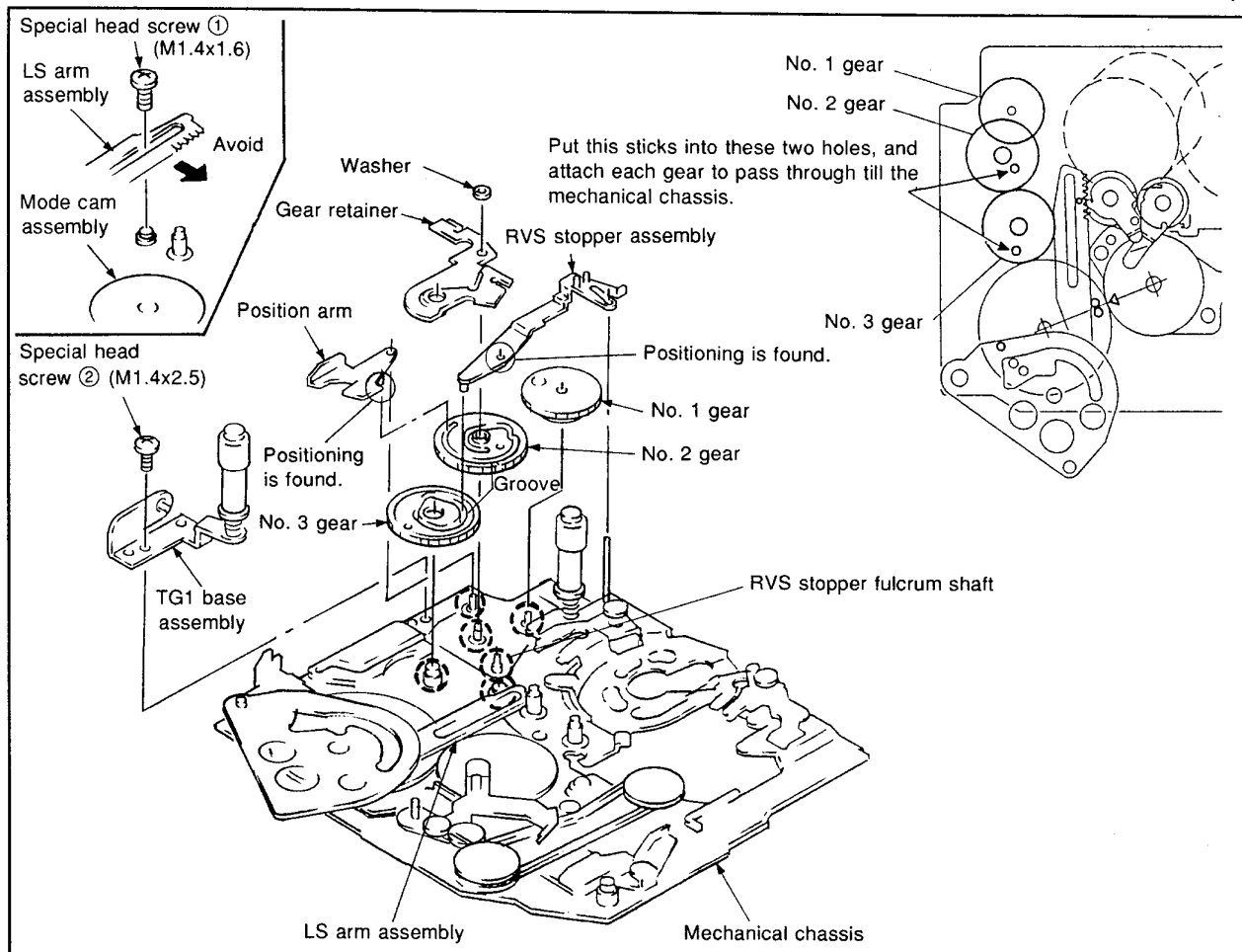
3-28. GEAR RETAINER, POSITION ARM, RVS STOPPER ASSEMBLY AND GEAR NO.1, 2 AND 3

1. Removing

- 1) Refer to 1-1. to remove the cassette compartment assembly.
- 2) Refer to 3-1. to remove the drum assembly.
- 3) Refer to 3-2. to remove the HC assembly.
- 4) Refer to 3-10. to remove the LED base assembly.
- 5) Refer to 3-22. to remove the gooseneck assembly and LS chassis block assembly.
- 6) Refer to 3-23. to remove the GL (S) block assembly.
- 7) Refer to 3-8. to remove the LM motor.
- 8) Remove the screw ① and keep away from the LS arm assembly.
- 9) Remove the washer and remove the gear retainer, position arm and RVS stopper assembly.
- 10) Remove the screw ② and remove the TG1 base assembly.
- 11) Remove each gear of No. 1, 2, and 3.

2. Attaching (Refer to "3-30. EACH GEAR PHASE ADJUSTMENT" for detail.)

- 1) Apply the grease (1.5 mm dia.) to six positions of  part and each gear of No. 1, 2 and 3.
- 2) Attach in the order of No. 3, 2 and 1 with attention to the phase. (As for gear of No. 1, phase adjusting is not needed.)
- 3) Attach the TG1 base assembly with a screw ②.
- 4) Apply the grease to the groove of gears No. 2 and 3.
Grease: Floil Grease (SG-941)
- 5) Attach in the order of RVS stopper assembly (The position adjustment is needed. RVS stopper fulcrum shaft), position arm (Adjust the pin and the groove of No. 2 gear.) and gear retainer with a washer.
- 6) Attach the LS arm assembly with a screw ①.
Fixing torque: 0.0981 N · m (1 kg · cm)
- 7) Refer to 3-8. to attach the LM motor assembly.
- 8) Refer to 3-23. to attach the GL (S) block assembly.
- 9) Refer to 3-22. to attach the LS chassis block assembly and gooseneck assembly.
- 10) Refer to 3-10. to attach the LED base assembly.
- 11) Refer to 3-2. to attach the HC assembly.
- 12) Refer to 1-1. to attach the cassette compartment assembly.



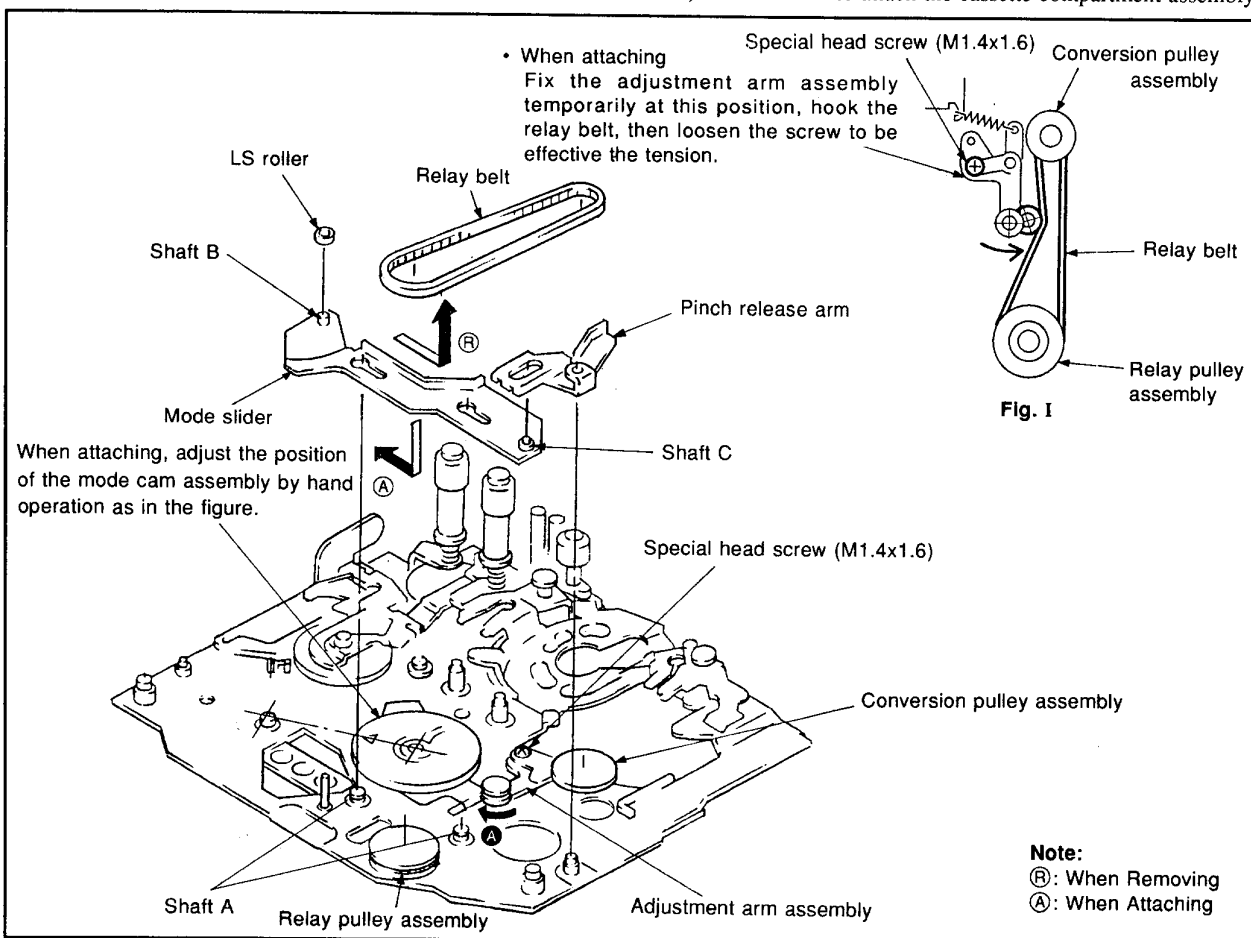
3-29. MODE SLIDER

1. Removing

- 1) Refer to 1-1. to remove the cassette compartment assembly.
- 2) Refer to 3-1. to remove the drum assembly.
- 3) Refer to 3-10. to remove the LED base assembly.
- 4) Refer to 3-22. to remove the gooseneck assembly, LS chassis block assembly, compulsion arm assembly and pinch release arm.
- 5) Refer to 3-23. and 3-24. to remove the each GL (S) and (T) block assembly.
- 6) Refer to 3-25. to remove the LS arm assembly, EJ arm and cam (S) assembly.
- 7) Loosen a screw, slide the adjustment arm assembly in the direction of arrow (fixed at the position in the figure I) **(A)**, and remove the relay belt.
- 8) Remove the mode slider in the direction of arrow. (Pay attention to lose a of LS roller.)

2. Attaching

- 1) Apply the grease (1.5 mm dia.) to the shaft A and attach the mode slider in the direction of arrow.
Grease: Floil Grease (SG-941)
 - 2) Apply the grease (1.5 mm dia.) to each shaft B and C, and attach the LS roller to the shaft B.
Grease: Floil Grease (SG-941)
 - 3) After the relay belt is attached, loosen the screw, check a tension to the relay belt, and fasten the screw tightly. (Refer to the figure I.)
Fixing torque: 0.0981 N • m (1 kg • cm)
 - 4) Adjust the phase of each gear of No. 2 and 3 and the mode cam assembly by using the mode selector II. (Refer to 3-30.)
- Note:** The mode cam assembly should be manual operated.
- 5) Refer to 3-26. to attach the cam (S) assembly, EJ arm and LS arm assembly.
 - 6) Refer to 3-23. and 3-24. to attach the GL (S) and (T) block assembly.
 - 7) Refer to 3-22. to attach the release arm, compulsion arm assembly, LS chassis block assembly and gooseneck assembly.
 - 8) Refer to 3-10. to attach the LED base assembly.
 - 9) Refer to 3-1. to attach the drum assembly.
 - 10) Refer to 1-1. to attach the cassette compartment assembly.



3-30. EACH GEAR AND MODE CAM ASSEMBLY PHASE ADJUSTMENT

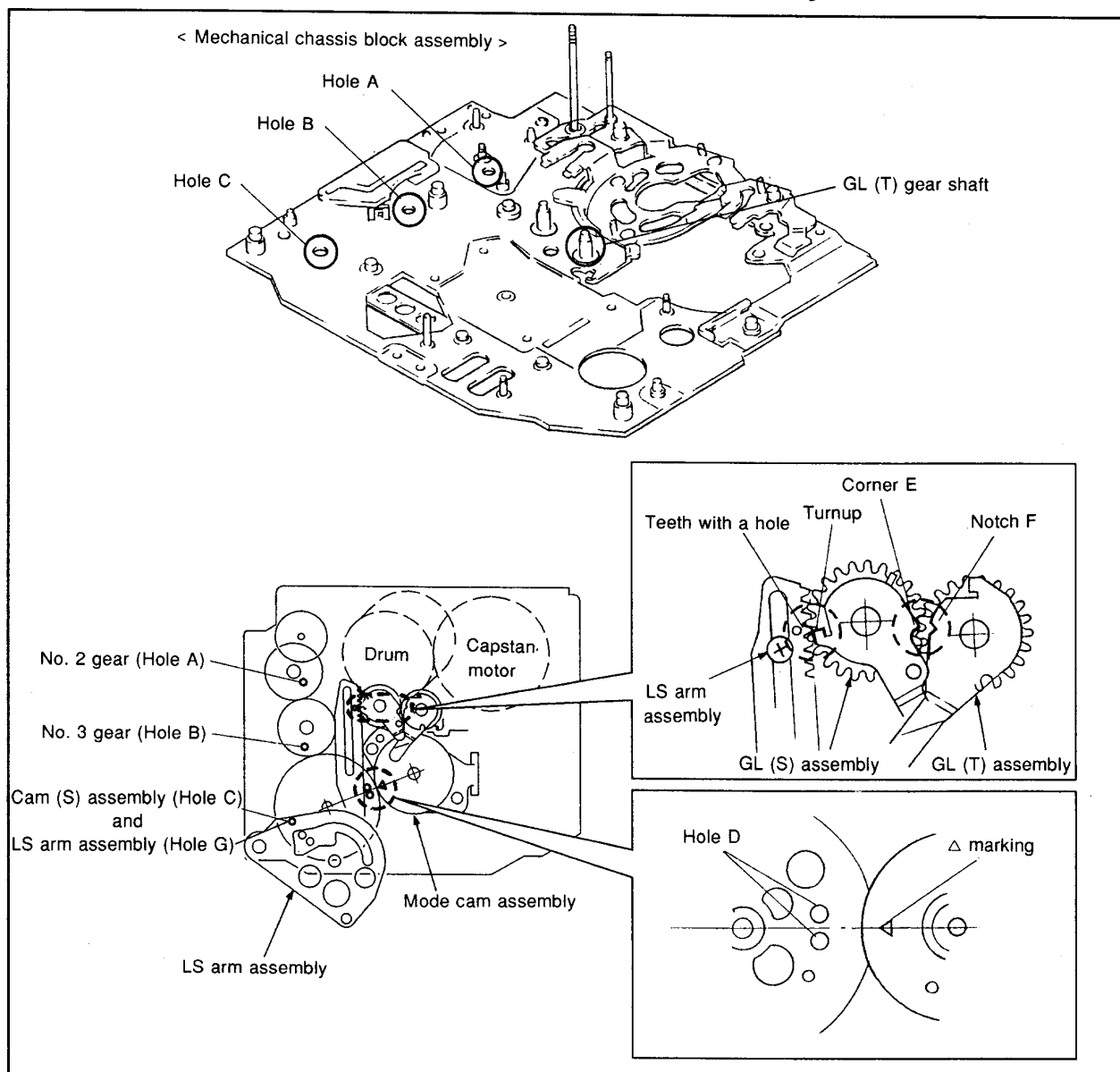
In case the phase of mode cam assembly and its related gears does not match, so that the normal operation is not performed due to replacement or removal of parts needed to adjust the phase, adjust the phase of each parts as below.

• Phase adjusting

- 1) Set each hole A of gear No. 2, B of gear No. 3 and C of cam (S) assembly to the holes A, B and C on the mechanical chassis in layers.
- 2) Set the position of the Δ mark on the mode cam assembly between two of holes D on the cam (S) assembly.
- 3) Attach the GL (T) assembly to the GL (T) gear shaft.
- 4) Set the position of the notch F and the corner E on the GL (S) assembly to the GL (T) assembly.
- 5) Set the hole G on the LS arm assembly to the hole C on the cam (S) assembly in layers. Also set the position of the teeth with a hole of the LS arm assembly and the turn-up of the GL (S) assembly at the same time.
- 6) After adjusting all phase, check the **[S. OFF]** mode by using the mode selector II (Ref No. J-18).

Note 1: The **[S. OFF]** mode is the condition that all phase are matched.

Note 2: As for attaching each gear and mode cam assembly, refer to attaching for each.



4. TAPE PATH ADJUSTMENT

4-1. PREPARATION FOR ADJUSTMENT

- 1) Refer to 2-2. to clean the tape running surface (tape guide, drum, capstan and pinch roller).
- 2) Connect the adjustment remote commander (Ref No. J-17) to the remote terminal of the set and turn the HOLD switch on.
- 3) Select the data of page: 3 and address: 3C, then set data: 07. (Note 1)
- 4) Connect the oscilloscope (Note 2). (Note 1)
 Channel 1—RS-63/64 board CN775 ① pin (Note 3)
 External trigger—RS-63/64 board CN775 ⑥ pin
 Trigger scope— +

Note 1: Refer to each service manual due to difference between each model. The case of DCR-VX700/VX1000 series is mentioned here.

Note 2: Connect the oscilloscope through the multi CP jig 2 (J-6082-140-A) or CPC jig (J-6082-311-A).

Note 3: Connect CN775 ① and ② pin (GND) at 75Ω resistance.

- 5) Playback a tracking tape (XH2-1) (Ref No. J-5).
- 6) Check that the RF waveform is flat at the entrance and exit of the oscilloscope. (See the figure I-**A**) If the RF waveform is not flat at the entrance and exit (See the figure I-**B**, **C**), adjust according to the adjustment from 4-2.
- 7) After adjusting and check satisfied with step 6), reset the data which was set in step 3) by using the adjustment remote commander. (Note 1)
 1. Select the data of page: 3 and address: 3C, then set the data: 00.
 2. Remove the power supply.

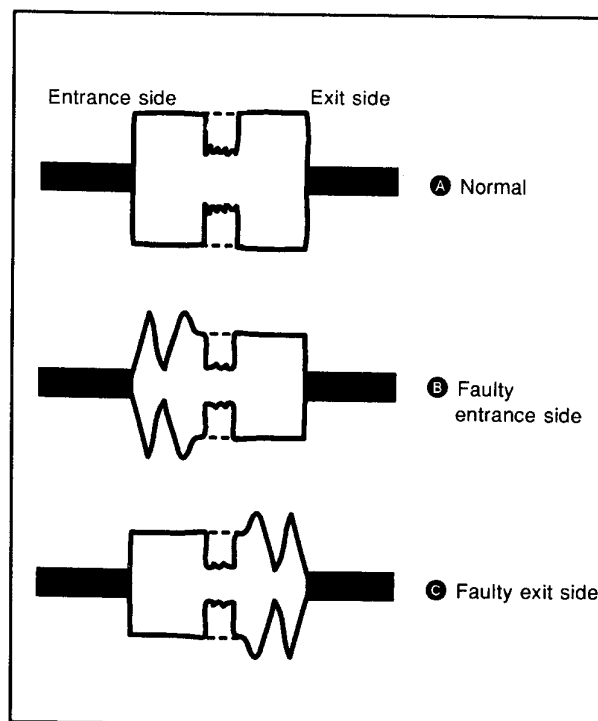
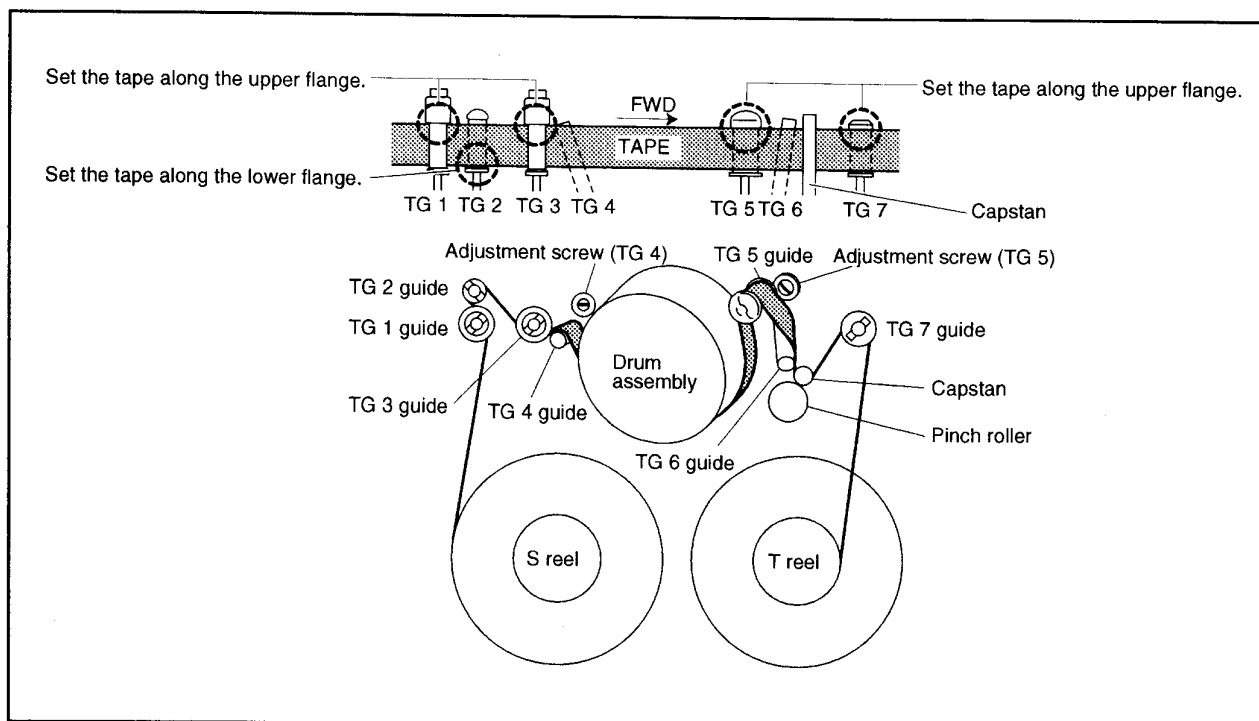


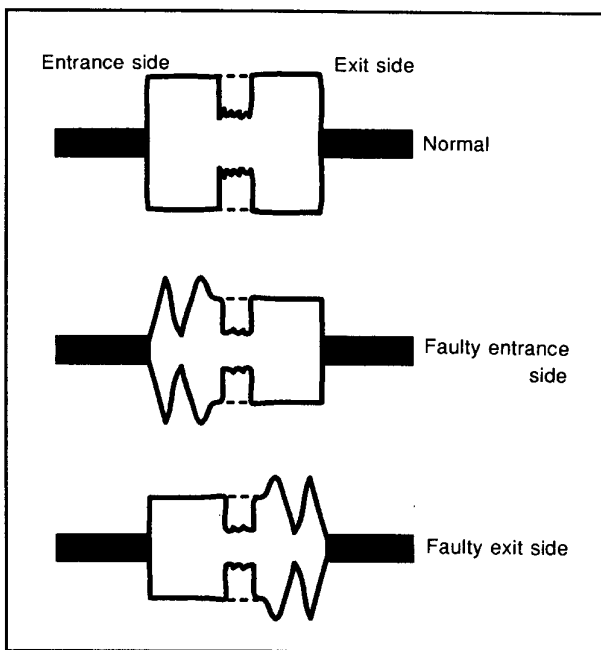
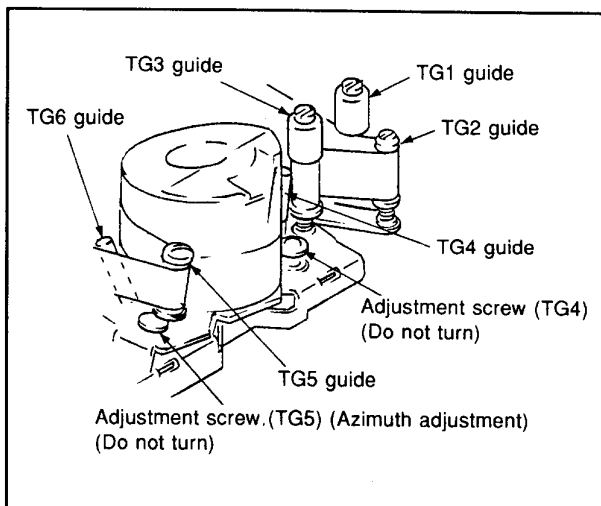
Fig. I



4-2. TRACKING ADJUSTMENT

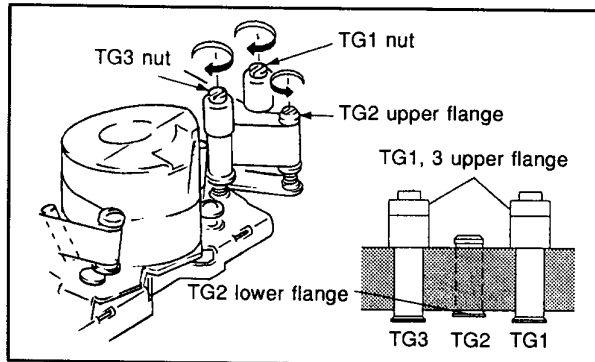
- 1) Playback the tracking tape (XH2-1) (Ref No. J-5).
- 2) Turn the TG3 guide so that the waveform is flat at the entrance.
- 3) Turn the TG5 guide so that the waveform is flat at the exit.

Note: Do not loosen the gate adjusting screw of TG4 and TG5.



4-3. TG1, TG2 AND TG3 GUIDE ADJUSTMENT

- 1) Playback the tracking tape (XH2-1) (Ref No. J-5).
- 2) Be sure the tape is parallel with the upper flange of TG1 and TG3 during FWD running, and check the tape is parallel with the lower flange of TG2 as well. In case there is a space between each flange and the tape, rotate the TG3 nut clockwise to be parallel with each flange as for TG1 and TG3, rotate the upper flange counterclockwise to be parallel with the lower flange as for TG2.



Confirm no change of the tracking waveform. If the tracking waveform at the entrance describes a downward curve as shown in the figure II, raise the height of TG2 lower flange to adjust the tracking at the entrance.

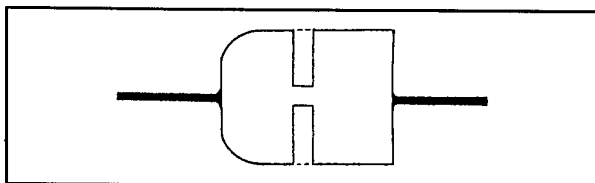
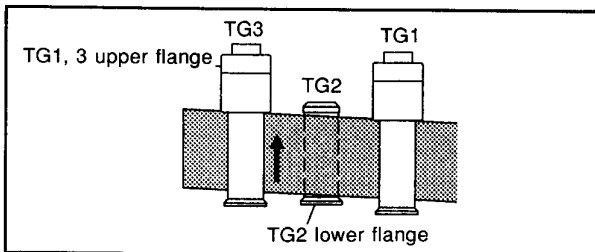


Fig. II

After adjusting the tracking at the entrance, set the RVS mode. If the tape is curled at the lower flange of TG2 guide, rotate the TG2 upper flange clockwise to correct the curl. Rotate the TG3 nut in a 180-degree arc counterclockwise, and check raising tape.



4-4. TG7 GUIDE ADJUSTMENT

- 1) In the playback mode, check that the tape is not slack between the capstan and TG7 guide.
Specification: 0.5 mm or less
If the tape is slack, rotate the TG7 guide and adjust to correct the slack.
- 2) Set the REV and check the RF waveform at the exit. (See Fig. III)
- 3) If the waveform is unsatisfactory, rotate the TG7 upper flange in a 90-degree arc counterclockwise and check the step 1) and 2) again.
- 4) Apply the screw lock (Ref No. J-20) to the part of screw on TG7 guide.

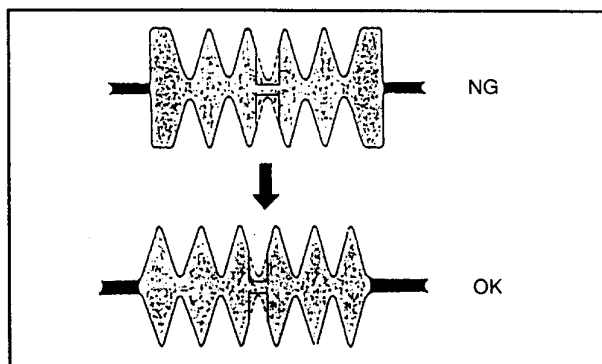
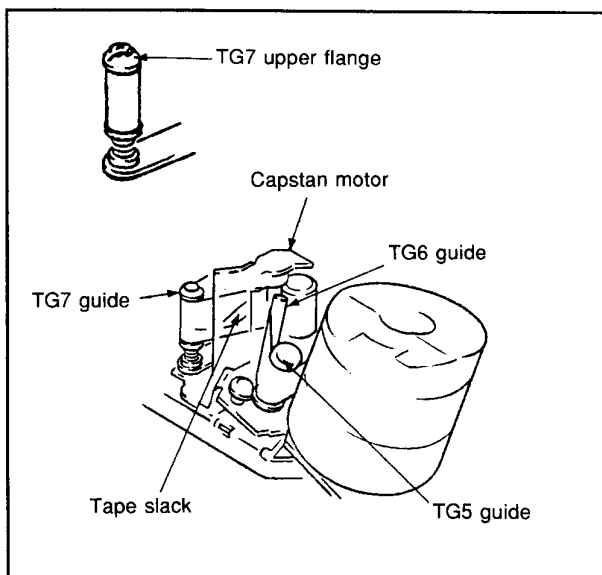


Fig. III

4-5. CHECKS AFTER ADJUSTMENTS

1. Tracking check

- 1) Playback the tracking tape (XH2-1) (Ref No. J-5). (See Fig. IV)
- 2) When the waveform's amplitude of CUE (or REV) is (A=100%), check the amplitude of RF waveform becomes approx. 0.65A (65%) during playback.

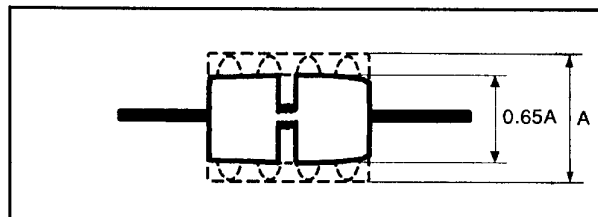


Fig. IV

- 3) When the waveform's amplitude of CUE (or REV) is (A=100%), check the difference between the minimum amplitude (Emin) and the maximum amplitude (Emax) for FWD is 30% or less. (See Fig. V)

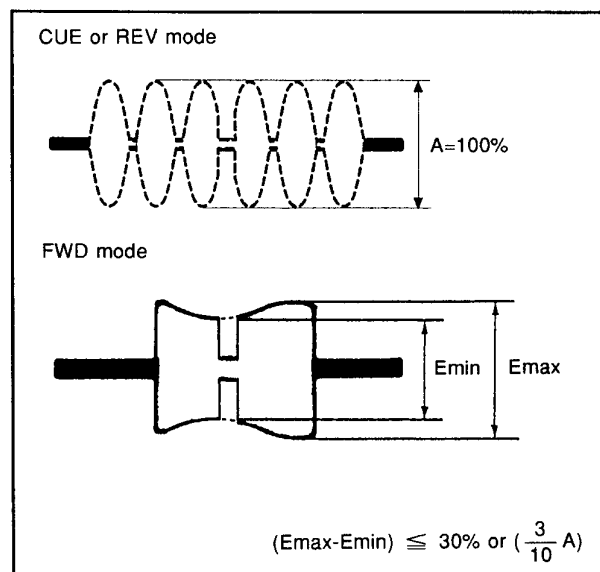


Fig. V

- 4) Check the waveform does not fluctuate badly. (See Fig. VI)

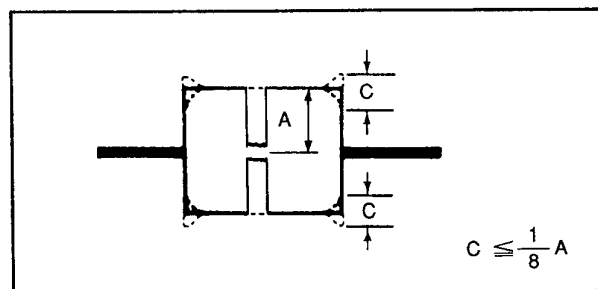


Fig. VI

2. CUE AND REV CHECKS

- 1) Playback the tracking tape (XH2-1) (Ref No. J-5) and set the REV. The peak pitches of the waveform at this time must be uniform. (See Fig. VII)
If not uniform, carry out "4-2. TRACKING ADJUSTMENT" and "4-4. TG7 GUIDE ADJUSTMENT".
- 2) Set the CUE. The peak pitches of the waveform at this time must be uniform. (See Fig. VII)
If not uniform, carry out "4-2. TRACKING ADJUSTMENT".

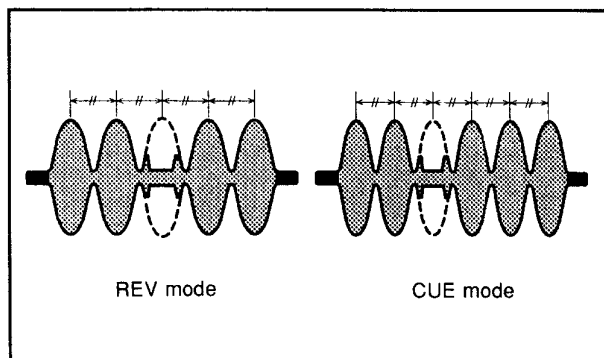
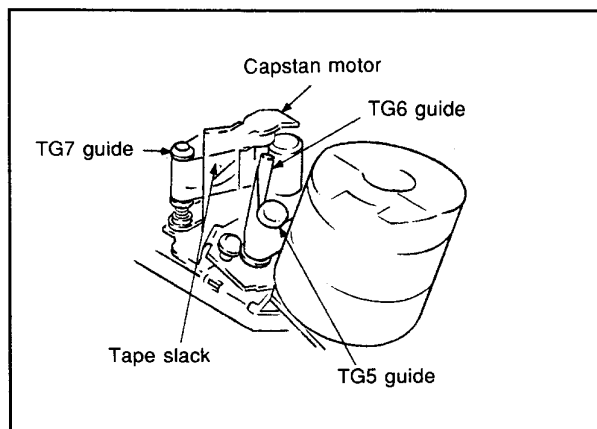


Fig. VII

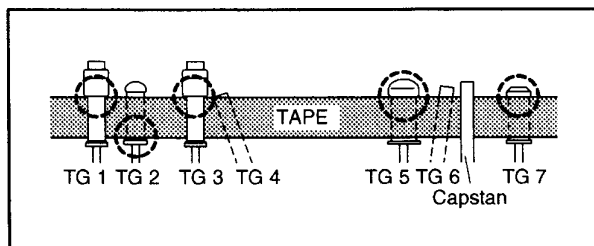
3. RISING CHECK

- 1) Playback the tracking tape (XH2-1) (Ref No. J-5).
- 2) Set the PLAYBACK mode, and check the RF waveform rises horizontally within one second. Also check the tape around the pinch roller is not slack.
- 3) Playback the tape after CUE/REV and FF/REW, and check the RF waveform rises horizontally within one second.
- 4) Repeat the checks at steps 2) and 3).

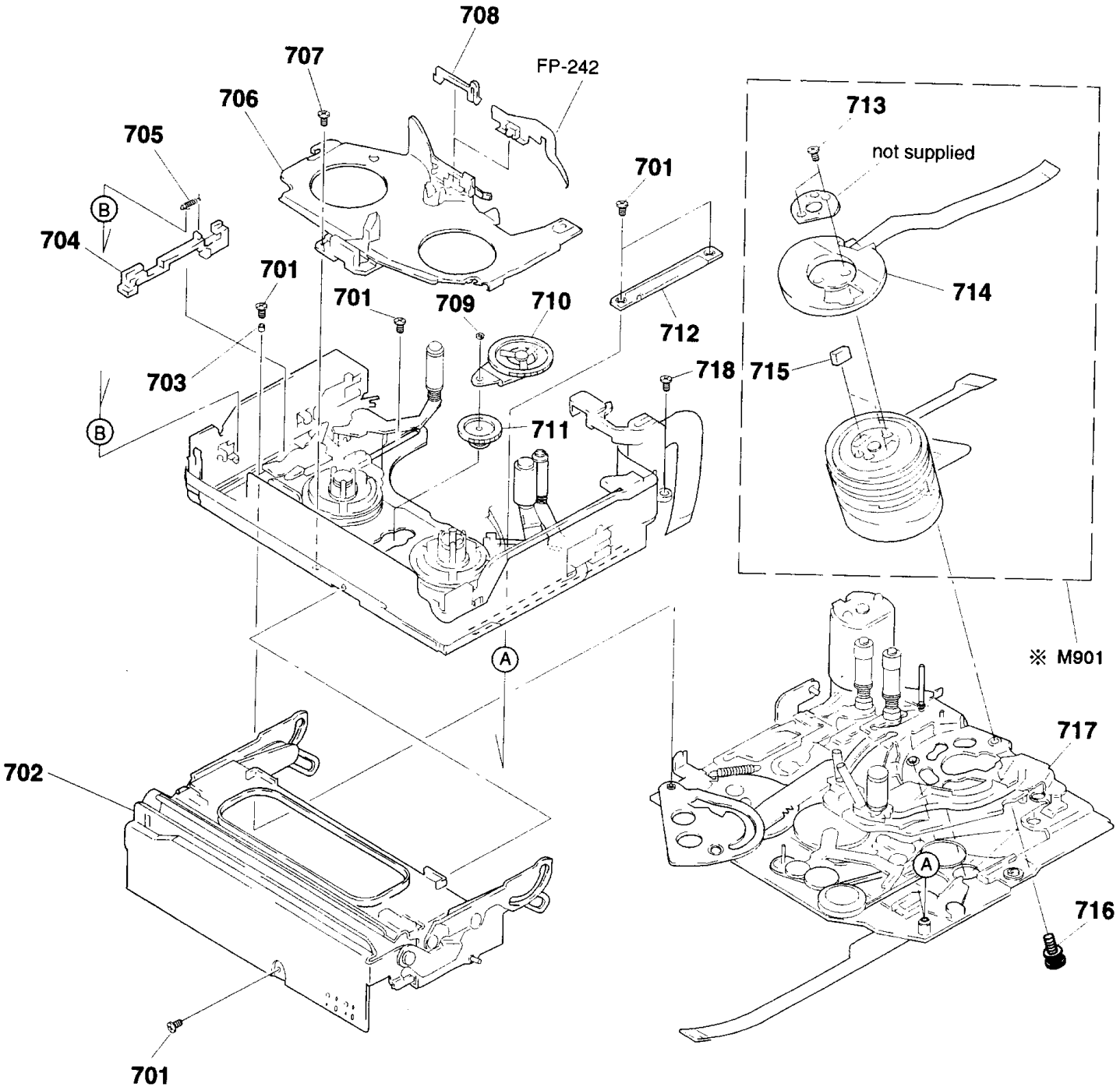


4. TAPE PATH CHECK

Check that the tape is not curled badly on each TG1 upper flange, TG2 lower flange, TG3 upper flange, TG5 upper flange and TG7 upper flange in the setting of CUE and REV.



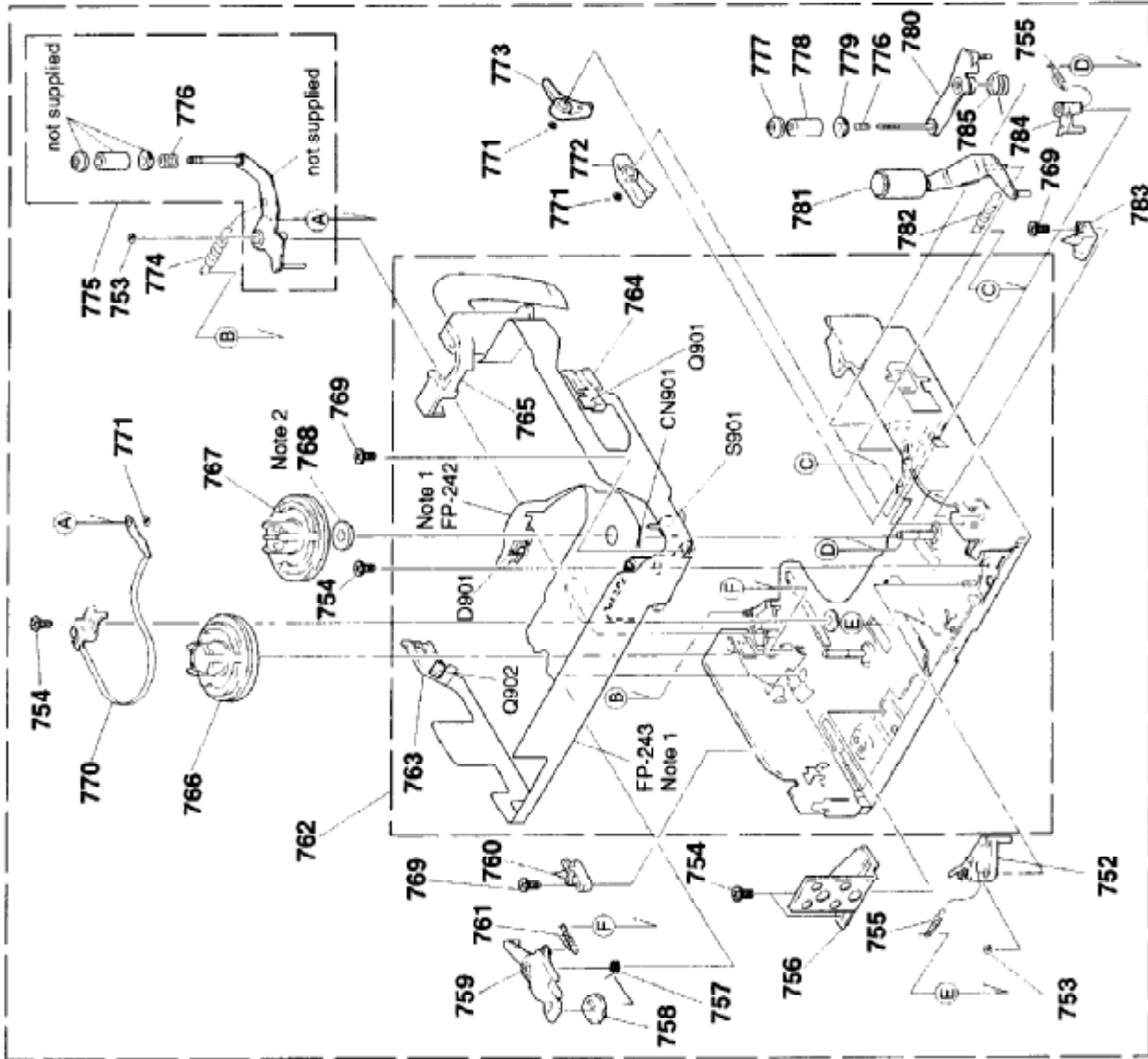
CASSETTE COMPARTMENT AND DRUM ASSEMBLIES



LS CHASSIS ASSEMBLY

Note 1: About FP-242 and FP-243

The FP-242 and FP-243 flexible boards are installed to a chassis with a hot press, which are included in the Ref. No. 762 LS chassis (S) assembly. They are not supplied separately because the high precision for installation is needed.

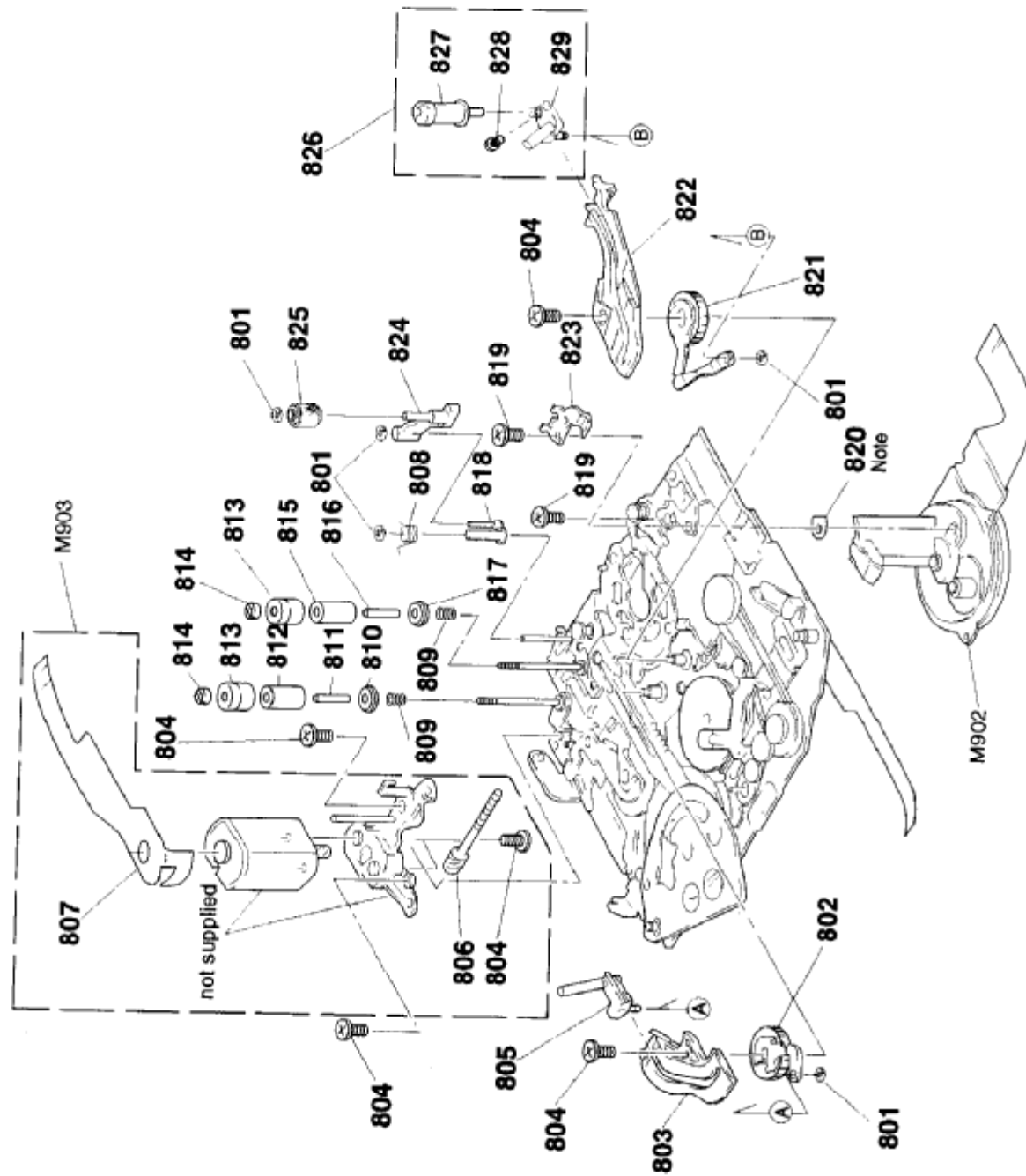


Note 2: Selecting the T washer

Select proper parts for the Ref. No. 768 T washer according to "3-21. Height adjustment for each reel table" on page 23.

MECHANISM CHASSIS ASSEMBLY (1)

Note: Be sure to remember the installed position (one of two positions), direction and thickness of the Ref. №. 820 (head spacer) when the M902 (capstan motor) is removed. Refer to "3-9. Capstan motor" on page 15 for details. The thickness of head spacer is normally 100 µm. If it is lost, two 50 µm head spacers will be needed. Be careful not to lose it.



MECHANISM CHASSIS ASSEMBLY (2)

